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TITLE OF THESIS/*TITRE DE LA THÈSE* Crime and Punishment: An Analysis of General Deterrence

UNIVERSITY/*UNIVERSITÉ* University of Alberta

DEGREE FOR WHICH THESIS WAS PRESENTED/ *GRADE POUR LEQUEL CETTE THÈSE FUT PRÉSENTÉE* Master of Arts

YEAR THIS DEGREE CONFERRED/*ANNÉE D'OBTENTION DE CE GRADE* 1978

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THE UNIVERSITY OF ALBERTA

CRIME AND PUNISHMENT: AN ANALYSIS OF GENERAL DETERRENCE

BY

© LAURIE L. BEVERIDGE

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

DEPARTMENT OF SOCIOLOGY

EDMONTON, ALBERTA

FALL, 1978

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled Crime and Punishment: An Analysis of General Deterrence, submitted by Laurie L. Beveridge in partial fulfillment of the requirements for the degree of Master of Arts.

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ACKNOWLEDGEMENTS

I wish to acknowledge the kind support offered by my committee members, Drs. Hartnagel, Harrell and Rule. In particular, the suggestions received from Dr. T. F. Hartnagel were both helpful and welcome.

Further thanks is also extended to Henri whose patient typing of this manuscript is greatly appreciated.

A special note of appreciation is given to my family for their constant encouragement to complete this lengthy project.

ABSTRACT

This thesis examines the relationship between measures of general deterrence (perceived certainty, severity and celerity of punishment), moral commitment to legal codes and criminal peer involvement as they affect self-reported criminality. In addition, 11 specific offenses (drinking under age, drunk and disorderly, smoking pot, using hard drugs, vandalism, shoplifting, theft over, theft under, joyriding, assault, sex with a minor) were analyzed to determine if a stronger relationship exists between threat of punishment and reported frequency of offenses that are mala in se as opposed to mala prohibita.

Data was collected from questionnaires administered to 252 Western Canadian university and community college students.

The findings of this study indicate that an exposure to an excess of criminal learning patterns vis-a-vis involvement with criminal friends increases the amount of crime committed. This does not preclude the possibility that a proclivity to commit crimes assures greater involvement with criminals. There is also some evidence that strong moral commitment can effectively reduce crime providing respondents are not extensively involved with criminal others.

Individual assessment of the relative importance of the general deterrence variables suggest that punishment threats (certainty and severity) are only weakly related to crime prevention. Their effects are contigent upon the sample

considered, type of offense, influence of other sanction characteristics, credibility of sanction threats, peer affiliations, degree of conformity to legal norms and/or social mores. In general, punishment threats are more effective in preventing crimes when offenses are of a less serious nature.

As formal sanction threats alone do not appear to prevent crime, it is advocated that future studies of deterrence principles should be conducted within the context of existing theories of crime.

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CHAPTER ONE

GENERAL DETERRENCE: SOME THEORETICAL PERSPECTIVES

> After years of trying, penal experts are admitting they can't really reform criminals in prison. So they are turning toward a new approach to an old problem: How to deter crime?
> (U.S. News and World Report, August 25, 1975:21).

Social Control and Legal Norms

The current mounting concern over the growing incidence of crime and delinquency makes a further examination of the relationship between crime and punishment both timely and important[1]. Central to this issue is the role social control plays vis-a-vis legal norms to ensure social order and presumably prevent crime. Historical and contemporary discussions on social integration actually suggest that social cohesion is attained and maintained in primarily two ways[2]: by infusing a moral commitment to folkways and mores through the socialization process (Durkheim, 1933:65-76; Sumner, 1940; Zimring and Hawkins, 1973:77-80); and by coercing compliance through the legislative process (Turk, 1964:363; Gibbs, 1968:515; Quinney, 1970:3-43; Tittle and Logan, 1973:371; Logan, 1974:1). No explanation to date is able to demonstrate the extent and manner to which either process -- by itself or in conjunction with the other -- does induce compliance (Cousineau, 1976:12-13). However, it is speculated that the greater

the complexity of a social system, the greater the reliance on legal prohibitions to ensure social order (Bankston and Cramer, 1974:251; Geerken and Gove, 1974:7). For this reason, the philosophical rationalizations which assume that laws do indeed control human action should be subjected to empirical verification[3].

Social Rationales for the Existence of Punishment

A number of purposes are attributed to the existence of punishment[4] in law. Perhaps the most comprehensive delineation of legal apologia is presented by Cousineau (1976:3-4). He distinguishes between nine possible rationales for the use of legal responses -- vengeance, restitution, atonement, retribution, incapacitation, symbolic reaffirmation, rehabilitation, specific deterrence and general deterrence[5]. For the sake of brevity we shall reduce each of the named defenses into four broader categories: the exacting of vengeance for wrongs incurred, the isolation and/or rehabilitation of individuals who represent a high crime risk, and the prevention of potential offenders from committing crimes.

It is the final motive, often referred to as general deterrence (Zimring, 1971) or general prevention (Andenaes, 1952), that we propose to examine both theoretically and empirically in this thesis.

General Deterrence Defined

As we suggest above, general deterrence uses actual or threatened punishment of others as an "example," allowing the fear of sanctions to operate as a curb on the potential criminal tendencies of any audience. However,

general prevention should not be confused with the other deterrence-associated terms; partial deterrence, absolute deterrence, marginal deterrence and special or specific deterrence (Zimring and Hawkins, 1973:70-74). Partial deterrence occurs when the threat of punishment reduces the incidence or quality of crime commission, as compared to general deterrence which theoretically prevents all incidents of crime. Absolute deterrence compares the incidence of crime occurring when a threat of punishment exists with the amount of crime that could be expected if the threat were removed; marginal deterrence compares the effectiveness of one type of threat against that of another, in order to determine which threat has a greater potential for preventing crime. Thus absolute and marginal deterrence refer to variations in degree of punishment whereas general deterrence assumes constancy of punishment.

Most important to this paper is that a clear distinction be maintained between specific and general deterrence. Special deterrence refers to a threat of further punishment of one who has already been punished for a crime. In this instance future crime is prevented by altering behavior patterns of one already punished. The idea that someone who is in fact punished will refrain from future criminal acts does not suggest "prevention by threat(s)" but indicates instead something about the effectiveness of "rehabilitation." This is a crucial point, for as Logan and Tittle (1973:374) point out, it could still be logically correct that punishment might generate more deviation for those punished but at the same time still be a powerful deterrent for those not punished. The difference in threat response between previously punished offenders and the rest of the population is

attributed to the labelling process resulting from punishment (Becker, 1964:9) and/or the propensity of an individual to commit an illegal act independent of his experience with punishment (Zimring, 1971:97-98)[6].

Classical Theory of Justice

We are suggesting that all preceeding definitions of deterrence imply "fear" as the mechanism whereby compliance is induced. This assumption is a reversion to early speculations on the deterrence topic by Cesare Beccaria (1738-1794) and Jeremy Bentham (1748-1832)[7], and is commonly referred to as the Classical Theory of Justice (Gibbs, 1968:515-516). Bentham and Beccaria argue that human action is rational -- we act to assure our self-interests. Essentially the argument is analogous to some principles of Exchange Theory (Simmel, 1950; Homans, 1961; Thibault and Kelly, 1963; Blau, 1964:454-455) and assumes that human actions are a consequence of the rational calculation of the utility principle. In this context crime is viewed as a "business orientated economic activity which is undertaken for the same reasons as other types of economic activity - profit[8]." Therefore the justification for punishment is that it makes the undesired action unprofitable. According to classical theory, if this deterrent effect is to occur -- making the results of a criminal action a cost rather than a benefit -- the deterrence system must project to the population-at-risk a high credibility in terms of celerity, certainty, severity and regularity of punishment[9] (Geerkin and Gove, 1974:2; Zimring and Hawkins, 1973:141-172). Furthermore, the potential offender is assumed to be sanction-wise[10], and to perceive that punishment of others for even a minor offense, is a warning that he

could be punished for any offense - major or minor[11].

Because the Classical Theory of Justice has assumptions similar to Exchange Theory, it is subject to some criticisms attributed to Exchange Theory. The most obvious criticism is that not all crimes are rationally motivated (Chambliss, 1967). Therefore this theory is limited in its applicability to only certain kinds of crime (Andenaes, 1975:340).

Aside from being limited in scope, the Classical Theory oversimplifies the deterrence process (Zimring and Hawkins, 1973:96) and masks other functions attributed to general deterrence (Andenaes, 1975:341). Andenaes notes that in addition to preventing crime through invocation of fear, the existence of the general deterrence principle is a reminder to the entire population of the importance of respect for law and order. Viewed in this context, there are mechanisms other than fear, through which legal responses can induce compliance (Zimring, 1971:4-6). Zimring speculates that the threat of punishment may teach a moral lesson within a larger context of socialization. For example, if within a stimulus-response situation, the forbidden behavior is repeatedly equated with bad consequences, the generalized effects could result in judging the behavior itself as bad[12]. He also suggests that obedience to the law may simply be habitual behavior (perhaps originating due to fear but maintained out of habit and/or respect)[13]. Finally he posits that in the case of some acts where moral inhibitions are weak but one feels morally obliged to be committed to law, threat of punishment can provide the "excuse" for compliance.

General Deterrence Within a General Explanation of Crime

The preceeding exposition suggests that: deterrence serves a function in the maintenance of social order; deterrence cannot be simply regarded as a "fear instigator" as is implied by Classical Theory; deterrence is, in itself, an insufficient explanation of why people obey the law; and deterrence is somehow interrelated with the socialization process. Further, we contend that because general deterrence is one of the major rationales for the construction and application of criminal and civil law (Logan and Tittle, 1973:371; Zimring and Hawkins, 1973:28), it should be included within the framework of a general explanation of crime (Andenaes, 1976:364; Gibbs, 1968:516)[14].

A "control" explanation of crime appears to be one context within which general deterrence seems to operate. One assumption underlying control theory is that "original man" has no self-control. Because of this, human beings by nature, are susceptible to committing a criminal act if it is the most convenient way of satisfying a need. Thus to prevent anti-social behavior, human beings require early and continual conditioning or training into social behavior (Trasler, 1962; Eysenck, 1964; Hirschi, 1969; Nettler, 1974). It is further suggested (Reckless, 1973) that the operation of this socialization process is abetted by internal and external controls or "containments" which place social pressures on the individual and direct him toward legitimate social behavior. One such "outer containment" to affect socialization is effective supervision (this includes threats of punishment) which enables primary groups to force an individual to conform to the expectations of others. The effectiveness of such external controls, for

example punishment acting as a training tool, depends on its frequency, severity, celerity of application (Nettler, 1974). Inner controls are said to supplement external pressures and they include such self-regulatory mechanisms as commitment to social norms, development of a good self-image and so forth. According to this explanation of crime, if external controls weaken, internal controls likewise become weaker as they are primarily "learned" controls and thus dependent on external controls.

Modern deterrence theorists (Salem and Bowers, 1970:21; Zimring, 1971; Zimring and Hawkins, 1973; Bankston and Cramer, 1974:255; Andenaes, 1975; Silberman, 1976:455) similarly envision a linkage between general deterrence and the socialization process. They imagine the role of legal norms to be that of a "tonic," strengthening moral commitments to laws. In this sense, the effects of general deterrence are achieved indirectly, with mores intervening between changes in legal responses and altered crime rates (Cousineau, 1976:30). This means that the deterrent effect of formal sanctions bolsters normative stability by acting as a antecedent to social norms. Some writers (Salem and Bowers, 1970; Bankston and Cramer, 1974; Silberman, 1976) support the position expressed above: that if a norm evokes strong moral commitment, threat of punishment is more likely to be effective both directly and indirectly in maintaining social order. Others (Zimring, 1971; Zimring and Hawkins, 1973; Andenaes, 1975) suggest that deterrence is only relevant when moral commitment to a norm is weak. For when one is highly socialized and thus highly committed to a norm, the threat of punishment is unnecessary.

Unfortunately, successful conditioning and training combined with threats of punishment applied severely, certainly and swiftly fails to completely explain obedience to the law. Still left unspecified are the conditions which reduce fear of sanctions (Hindelang 1973; Tittle and Rowe, 1974:461). Classical theorists recognize that the motivation to engage in various acts differs as does the motivation of different individuals with respect to the same act. They argue that high motivation requires a greater amount of sanction to deter it than low motivation. Unfortunately these writers do not specify the conditions which determine high and low motivation (Tittle and Rowe, 1974; Silberman, 1976).

Differential-association and the operant learning process provide some answers to individual differences with respect to legal obedience. Differential-association suggests that all individuals are subject to learning (in varying degrees) both definitions of situations "which justify breaking a particular law and definitions which legitimize that law[15];" and that it is the unequal ratio between accumulations of such definitions that result in one obeying or disobeying law (Cressey, 1960; Sutherland and Cressey, 1970). Since such learning situations often occur within primary group situations, individuals who typically associate with others who are criminally involved are more likely themselves to become so involved because of differential opportunities for associations with an excess of criminal behavior patterns (Cressey, 1960; Short, 1960; Voss, 1964).

Overview of the Analysis

Having discussed some of the theoretical issues related to the prevention of criminal behavior, we now present an outline of the thesis. A review of research on general deterrence indicates that there exists a number of variables theoretically and/or empirically associated with the reduction of criminal behavior. It is our proposition that an analysis of the relationship between such variables will contribute toward the construction of a general explanation of criminal deterrence.

In Chapter Two we review some of the empirical research on issues related to general deterrence. Chapter Three focuses on the specific dimensions to be investigated in this study. Chapter Four outlines the data and methodology to be employed. This chapter includes a discussion of limitations related to deterrence analysis and presents some suggestions to overcome these problems. Chapter Five provides the results of a statistical analysis and Chapter Six attempts to explain sample differences, examine findings in accordance with the theoretical proposals and offer some suggestions for future deterrence research.

It is the contention of this treatise that threat of punishment, when considered within the context of socialization and human association, can influence normative stability as represented by degree of compliance to legal norms. We now turn to a discussion of some of the factors which have been shown to affect the deterrence process.

FOOTNOTES CHAPTER ONE

[1]For some indication of recent popular anxiety over rising crime rates in the U.S. see Time Magazine (1975:12-23) and U.S. News and World Report (1975: 21-25).

[2]Cousineau (1976:15) and Gibbs (1968:515) note that "Functionalists argue that the social order is the consequence of concensus. Socialization produces agreement upon a common value system, and produces an integrated social system. Conflict theorists, on the other hand, contend that the social order is maintained through coercion by the powerful. Society consists of divergent and conflicting value-systems, and the social order is maintained by the use of legal responses."

[3]This plea for more research on assumptions underlying the legal system is supported by Andenaes (1975:339) and Zimring (1971:1, 106-107). For an opposite point of view see Cousineau (1976:13). He contends that the empirical verification of such philosophical debates are in reality will-o'-the-wisp due to insurmountable theoretical and empirical problems. Because it can never be proved or disproved that threats of punishment accompanying legal proscriptions do indeed prevent crime, one can only defend their use on moral grounds.

[4]We shall use punishment throughout this paper to refer to a consequence for committing an offense against the law, imposed by the state upon an actual or supposed offender because of his offense. The consequence is deliberately imposed by persons who are authorities of the legal system in whose jurisdiction the offense occurred (Cousineau, 1976:20). It shall also be assumed that this consequence is coercive in nature and results in some form of perceived or actual deprivation (Turk, 1969:19). Implied in this specific definition are all the aspects of punishment suggested by Solomon (1964:239), "a punishment is a noxious stimulus, one which the subject will reject if given a choice between the punishment and no stimulus at all."

[5]Cousineau (1976:3) distinguishes between legal justifications for using punishment in the following manner: (1) vengeance - requires a greater degree of punishment than harm inflicted; (2) restitution - requires repayment for harm inflicted; (3) atonement - requires personal penitence for harm inflicted; (4)

retribution - requires an equal degree of punishment; (5) incapacitation - requires removal of offender for the sake of public safety with no attempt to change the offender; (6) symbolic reaffirmation - requires the constant use of laws to strengthen mores and their rituals; (7) rehabilitation - requires treatment of offenders to attempt to change behavior patterns; (8) specific deterrence - requires an attempt to correct the offender by punishing him so in the future he will not re-offend; and (9) general deterrence - requires the imposition of legal responses on offenders so that potential offenders will be prevented from becoming actual offenders.

[6]According to Zimring and Hawkins (1968:102) and Bankston and Cramer (1974:275) it is possible to identify similarities among violators of specific legal norms. The marginal group can be expected to exhibit some commonality in such characteristics as age, sex, social class, occupation, race, ethnicity, area of residence; and for this reason it has been suggested that some groups are more likely than others to be immune to general deterrence (Turk, 1969:162-171).

[7]For a complete discussion of and referencing on the topic of the Classical Theory of Justice as it relates to deterrence, see Cousineau (1976:16-18).

[8]Andenaes (1975:340).

[9]To be effective deterrence must communicate the following information to a potential offender: If he commits a criminal act the probability he will be detected and punished is certain and swift; that the severity of the punishment will offset any gains he might achieve through the criminal act; and that others are being punished as an example to himself both frequently and continuously.

[10]Many studies to date (essentially public surveys of legal knowledge) have concluded that the general population is not particularly well-informed regarding legal sanctions (Henshel and Carey, 1972), however Tittle and Logan (1973) argue that it is entirely possible that ignorance of sanctions is the major deterrent mechanism with respect to legal norms. They say it may be the anxiety that stems from uncertainty that may influence the behavior of certain classes of people.

[11]For some evidence of this "generalizing effect" of punishment on the deterrence of crime by potential offenders, see Silberman (1976).

[12]Gibbs (1968:518) argues that "confronted with a basis for anticipating severe and certain punishment, a person is less likely to commit a criminal act than one who has no basis for such an anticipation." It is really the application of the reinforcement theory of human behavior.

[13]There is some evidence of habit-formation involved in the compliance process (Jensen, 1969:199).

[14]These authors point out that no theory purporting to explain criminogenesis can be considered complete without some recognition of societal reactions to crime - general deterrence represents one such reaction.

[15]Nettler (1974:194).

CHAPTER TWO

GENERAL DETERRENCE: SOME EMPIRICAL EVIDENCE

We proposed in Chapter One that general deterrence is a "preventive effect[1]" which uses actual or threatened punishment to deter potential offenders from committing crimes. A number of variables have been empirically tested and found to play some role in preventing and/or altering criminal behaviour. In this chapter, we will discuss some of the research, past and present, which is helping to clarify the specific conditions under which legal sanctions do or do not induce compliance to legal norms. The literature suggests the effectiveness of punishment as a deterrent varies with: type of criminal act, type of legal norm, characteristics of potential populations of offenders, characteristics of sanctions, attitude toward the legal order, and type of peer association.

Type of Criminal Act

Some crimes are shown to be more deterred by threat of punishment than others[2]. Chambliss (1967:346-378)[3] compares the results of studies done on expressive or emotionally based crimes to those which are instrumental or goal-orientated. He finds the former are particularly uneffected by threat of sanction. He also notes that crimes of a professional nature are similarly undeterred by

punishment as arrest and/or imprisonment are accepted as a normal business hazard. Ball (1960) lends support to Chambliss' argument. He finds landlords in Honolulu after World War II are deterred from violating rent and price control regulations by threats of legal reprisals. Similarly Schwartz and Orleans (1967) claim threats of legal action increased compliance to tax laws among their upper class sample.

Andenaes (1952; 1966:957-58; 1971:537-53) using historical occurrences as evidence, compares instrumental crimes such as violations of building codes, traffic ordinances and blackout regulations to certain expressive crimes (murder, rape), and finds the former to have a greater potential for successful preventive deterrence. He cautions, however, that it is sometimes difficult to make a clear distinction between rational versus emotional crimes. Citing an abortion study conducted in Eastern Europe, he discusses how, using the birthrate as an index of conformity, liberal abortion laws after World War II resulted in a sharp decline in the birth rate. This suggests that prior to abortion on demand, people were deterred from obtaining illegal abortions by the law preventing access to necessary services.

Type of Legal Norm

Zimring (1971) proposes that moral commitments are more likely to deter for laws having the support of social norms or mores (mala in se), while general deterrence is more effective with laws not supported by internalized moral prohibitions (mala prohibita). According to this logic, when laws lack moral

support only fear of reprisals will deter others from committing the forbidden act. Some support for this hypothesis is offered by Chiricos and Waldo (1972). In a questionnaire interview of 321 undergraduates at Florida State University to ascertain the extent of self-report criminal behaviour, the researchers found marijuana use to be more deterred by penal sanctions than theft under $100. They argue that on this campus soft drug use is a relatively accepted abuse and can only be prevented by scare tactics, while theft is still considered socially taboo and needs no further legal threats.

However, there is some evidence that the opposite effect can occur. Silberman (1976) in an expansion of Chiricos and Waldo's study finds premarital sex, drinking under age, petty shoplifting and marijuana use to be unaffected by the offense-specific threat of punishment but that incidents of assault, hard drug use, vandalism and petty theft are reduced by such threats. On the basis of these results, Silberman claims that only laws which are ascribed legitimacy--in terms of "actual" obedience to the law--are deterred by threats of punishment. When a law lacks such moral support not even threat of sanction will prevent its occurrence. Viewed in this context, Silberman redefines his predecessors' classification of crimes. Marijuana use, which is practiced by few of Chiricos and Waldo's sample (despite their verbal acceptance of this abuse), is now mala in se while petty theft committed by 50% of the same sample becomes mala prohibita. Silberman concludes, "the findings of both studies require the conclusion there is a stronger relationship between threat of punishment and reported frequency of offenses for offenses which are mala in se than those which

are mala prohibita[4]."

Andenaes (1966:970) says of laws that their effectiveness in preventing further crimes is dependent upon their degree of acceptance to that portion of the population who control the criminal justice system. If a law is unpopular, there is a reluctance on the part of official legal agencies, to arrest, prosecute, and convict! This explanation is adopted by Robertson et al (1970) to account for the failure of Chicago's crackdown on drunken drivers. In this instance, Chicago legislators attempted to reduce city traffic fatalities by increasing penalties for drunken driving to a seven day jail sentence and one year license suspension. Despite extensive media publicity, fatalities did not decrease. Robertson blames the failure of this campaign on the reluctance of the police and courts to enforce a new law which they judged too severe.

Characteristics of Potential Populations of Offenders

Bankston and Cramer (1975) discuss the concept of marginality (Zimring and Hawkins, 1968) which refers to the possibility of identifying similarities among violators of specific legal norms. They say, because there exists commonality in such traits as age, sex, social class, occupation, race, ethnicity and area of residence for each criminal group, it is possible to identify potential law violators. Based on this knowledge, Bankston and Cramer propose "the greater the ratio of the marginal category to the total population with respect to a given law, and the greater the homogeneity of the marginal group, the smaller will be the compliance rate." No study has yet tested this hypothesis.

The predisposition of a specific population toward commitment to crime as a way of life is shown by Chambliss (1966) to have a definite association with compliance rates. Surveying a number of offense-offender studies he concludes that those groups which are highly committed to legitimate society are more likely to be receptive to threats than those who lack such a commitment.

Andenaes (1952) suggests that the type of population characteristically associated with specific offenses can be differentially affected by threat of punishment. He describes how some crimes typically committed by the lower class --such as bootlegging--are more receptive to severity of punishment, while those characteristic of the upper class--such as embezzlement--are more receptive to certainty and/or perceived certainty of punishment.

Schwartz and Skolnick (1964) attempt to study the consequences of stigma associated with legal accusation. In particular, they contend that it is the social position of the offender that determines the degree of deprivation (punishment) he will suffer when sanctioned. To measure the class differences in stigma effects the researchers compare the future employment opportunities of lower and upper class alleged offenders. A field experiment is first conducted involving a hypothetical unskilled laborer who has previously been charged with assault. Applications in his behalf are sent to 100 prospective employers. These job applications are identical except 25 make no mention of the assault charge; 25 mention the charge and a subsequent conviction; 25 mention the charge and a subsequent acquittal; and 25 mention the charge and a subsequent honorable acquittal. Responses to these applications show that gross discrimination occurs

when an employer has knowledge of the laborer's criminal record. These results are in marked difference to those obtained from an upper class sample. In a questionnaire submitted to 58 doctors accused of malpractice, Schwartz and Skolnick find that irrespective of the final disposition of the court case, the majority of doctors report no negative effects on future employment opportunities. Although Skolnick and Schwartz caution against hasty conclusions--due to considerable differences in research designs--they do claim some support for their hypothesis that social position of an individual can alter the effectiveness of a sanction threat.

Characteristics of Sanctions

The Classical Theory of Justice (see Chapter One) suggests that certain attributes associated with punishment explain the major portion of the variation in crime occurrence. These characteristics are certainty, severity, celerity and regularity of punishment. Unfortunately empirical research has studied the effectiveness of only sanction certainty and severity.

Certainty and Severity: Early Research on Deterrence

Much of the historical research on severity and certainty makes no attempt to separate the independent effects of these two variables. The capital punishment studies fall into this category. All of these early studies of deterrence seriously question the efficacy of formal sanctions.

Dann (1935) discusses the impact of well-publicized executions on

homicide rates. He argues that the effect of such executions should result in lower homicide rates immediately after the executions. Using five cases occurring in Philadelphia, he collects homicide data for ten and 60 days before and after executions. He finds more murders after executions than before and concludes that his data gives no support to the deterrence hypothesis.

Similarly Savitz (1958) proposes that the point of greatest general deterrence value should be at the time of a crimes greatest publicity, just prior or following the sentencing of an offender. Analyzing the commission of capital offenses for a period of eight weeks before and after the sentencing of Raymond Pierce, William Chavis, Aaron Turner and William Ramage, Savitz finds no significant change in the murder rate.

Schuessler (1969), using a crude measure of certainty of execution for homicide namely, number of executions per 1,000 homicides, compares variations in this index to the homicide rates in 41 death penalty states from 1937 through 1949. He also tests the assumption that the largest reduction in the murder rate should follow the largest number of executions relative to the frequency of homicide for 11 states. His results indicate that homicide rates and certainty of execution are not related.

Finally, Sellin (1967), comparing the homicide rates in contiguous abolitionist and retentionist states, finds that these rates vary independently of the presence or absence of the death penalty. He suggests other factors such as normative structure, population composition or economic conditions influence compliance to legal norms.

Despite the capital punishment studies, there is considerable evidence that certainty and severity of punishment do serve as an effective deterrent to potential criminals[5].

Certainty of Punishment

The variable which shows the most consistent association with lower crime rates is certainty of punishment. Research from 1968 on repeatedly demonstrates moderate negative correlations between varying indicators of certainty of punishment for varying offenses and crime rates.

Gibbs (1968), using FBI and prison statistics, analyzes the relationship between certainty of imprisonment and crime rates for homicides. Using the number of state prison admissions for homicide in 1960 divided by average number of homicides reported to police 1959-60 as his measure of certainty of punishment, he compares this to murder rates known to police in 1960. The results of a chi-square and phi-coefficient analysis show an inverse relationship between this index and homicide rates in U.S. states. Gibbs also finds a weak negative correlation between median months served on homicide sentence by persons in state prisons December 31, 1960 (index of severity) and crime rate. He concludes that although certainty of punishment appears to be the more important variable, the findings suggest a deterrent effect for imprisonment that increases with greater probability of lengthy incarceration.

In a re-analysis of Gibb's hypothesis, Gray and Martin (1969) generate a series of regression models which also show a moderate inverse association between

certainty of punishment, severity of punishment and homicide rates. They also report that Gibb's suggestion that certainty of punishment is more important than severity is unsupported by their data and that both variables have an equally weighted impact on homicide rates. In addition, they say a non-linear model is the best predictor of homicide rates.

Bean and Cushing (1971) extend the Gray and Martin model by incorporating a demographic variable. They find the effects of certainty and severity of punishment are contingent upon the racial composition of a region--the greater the percentage Black, the greater the crime rate. Their results indicate that the three variables, certainty, severity and race account for 76 percent of the total variation in homicide rates. Controlling for race, they find only certainty of punishment retains its negative relationship to homicide rates.

A final analysis of Gibb's data is done by Gibbs and Erikson (1973). They support Gibb's earlier findings but suggest that associations between severity of punishment and crime rates is stronger with smaller variations in certainty of punishment. They do not find the inverse to be true.

A further testing of the deterrence hypothesis is reported by Tittle (1969). His new indices of certainty and severity of punishment are number admitted to prison for crime "x" 1960 and 1963 divided by number of crime "x" known to police 1959 and 1962, and mean length of sentence for crime "x" by those released from state prisons in 1960, respectively. He finds an inverse association between certainty of punishment and crime rate, (sex offenses = -.57, assault = -.46, larceny = -.37, robbery = -.36, burglary = -.31, homicide = -.17

and auto theft = -.08). For severity of punishment he finds a moderate negative association of -.45 for homicide only. Tittle suggests that his data indicate an interaction effect occurring between certainty and severity of punishment: that although certainty of imprisonment is associated with lower crime rates, severity is associated with lower crime rates only for particular high levels of certainty.

Chiricos and Waldo (1970) attempt to extend Tittle's research by examining the relationship between certainty and severity of punishment and crime rate for three points in time. They then relate changes in crime rates to prior changes in certainty and severity of punishment. They find that although certainty of punishment has a low negative correlation with crime rate for all index crimes except homicide, no similar pattern emerges from the analysis of changes in levels of certainty and severity of punishment on changes in crime rate. Although their results do indicate certainty of punishment to be associated with deterrence, they refute this explanation in favor of methodological error. They say this association is a statistical artifact occurring because the denominator of the certainty index and the numerator of the deviance index are the same.

This interpretation is refuted by Bailey, Gray and Martin (1971) and Logan (1971). These authors charge that the data analysis used by Chiricos and Waldo is misleading, incomparable and incomplete. They say that relating percentage changes between two indices is unreliable since slight and erratic changes can show up as strong and widely varying percentages when the base on which the percentages is calculated is low, as is the case with Chiricos and

Waldo's data; that arbitrary selection of widely separated points in time (1950, 1960 and 1963) for computation of the measure of percentage change in indices of certainty, severity and crime rates is illegitimate--that is, essentially Chiricos and Waldo are comparing various "trends" in punishment with various "trends" in crime, and establishing each "trend" by the arbitrary selection of two time points; and that by studying only specific offenses without inclusion of a "total offense" category, Chiricos and Waldo maximize the likelihood of an unstable finding. This is especially important when one is reporting and recording criminal behavior changes through time, as different values of crime rate measured at two widely varying points in time--1950 and 1960 for example--can reflect methods of reporting and recording crimes as much as actual changes in crime rates. Finally Logan demonstrates by the use of part-correlations, where he removes the effects of the common term, that the association between certainty and deviance is not spurious.

Logan (1972) and Bailey and Smith (1972), using indices similar to Tittle and applying correlation and regression techniques to aggregate data on imprisonment and crime rate, support Tittle's conclusions. They find certainty of imprisonment to have a negative curvilinear relationship to crime rates and that severity of punishment is negatively related to crime rate for homicide only. However, Logan finds that when the effects of certainty as either an antecedent or an intervening variable are removed, there is a negative correlation between severity and crime rate. He speculates this suppressor effect occurs becasue severity and certainty have a negative reciprocal relationship and both have

negative effects on crime rate. Thus the relationship between certainty of punishment and crime rate stays the same when controlling for severity. But when certainty is controlled, the relation between severity and crime rate becomes negative for all offenses except auto theft. In addition, Logan finds that severity interacts with certainty to increase the negative relationship between certainty and crime rate under conditions of high severity. (Tittle's interaction effects are not found to be occurring in this study.)

Teevan (1972) revises certainty and severity indices to adapt to Canadian aggregate data sources (Canadian Crime Statistics, Statistics of Criminal and Other Offenses and Correctional Institute Statistics)[6]. He finds low negative correlations between certainty and crime rate for rape, robbery, breaking and entering, and murder but no association for the severity of punishment of these offenses and crime rate.

Similarly, Attunes and Hunt (1973) attempt to distinguish the independent and interactive effects of certainty and severity of sentence on the level of crime rates in U.S. states. Applying several regression models, they find no support for severity of sentence acting independently but find a consistent moderate effect for certainty of punishment acting to reduce crime rates. Interestingly enough, their most predictive model is substantively uninterpretable, hypothesizing a joint effect of certainty and severity, and a separate effect of certainty acting alone.

Logan (1974) compares Uniform Crime Rate data on 50 U.S. states to measure the relationship between certainty of arrest and crime rate for total index felony categories and for each of the individual felonies that make up that index.

His index of arrest certainty is number of crimes cleared by arrest, 1962-68 divided by number of crimes known to police, 1964-68 and the index of crime rate is number of crimes known to police, 1964-68 divided by population, 1966. He finds that certainty of arrest has a low to moderate correlation with crime rate for every felony except homicide and assault. This he suggests indicates crimes against persons are less deterred by threat of punishment than property crimes. Comparing certainty of imprisonment with certainty of arrest he concludes that crimes of property are more related to certainty of arrest while crimes against the person are more related to certainty of imprisonment. In this article Logan gives a rather lengthy defense of his use of arrest rates as opposed to other indicators of certainty. He also presents other causal models in addition to certainty of punishment having a negative effect on crime rates, and is able to show all are spurious except the possibility of crime rate having an inverse effect on certainty. He also suggests using cities as the unit of analysis rather than states, as variations in certainty of arrest probably average out somewhat at the state level thus depressing correlations.

Borrowing Logan's suggestions, Tittle and Rowe (1974) compare arrest data with crime rates for cities and counties in Florida. Their results support a deterrence argument but suggest that the probability of punishment must reach a 30 percent certainty of arrest level before a deterrent effect is possible. Although this study includes the control variables sex, age, city-size, percent of women in labor force, SES, percent poverty, median education, income and race, the results indicate certainty and control variables explain only 42 percent of the

variation in crime rates. This indicates that other variables are also exerting independent effects on deviance.

A final study in this series by Logan (1975), although supporting the major findings regarding certainty of punishment, questions the causal interpretation of the earlier studies. Using the results of a two-wave panel analysis he finds that, except for homicide and assault, the crime rate seems to lower police efficiency more than police efficiency deters crime[7]. However these results are not significant and should be interpreted with caution.

Further support for the certainty and severity hypothesis is provided by recent econometric studies. Their "cost-benefit" philosophy adapts very easily to the tenets of exchange theory as suggested by classical theorists (Phillip and Votey, 1972; Ehrlich, 1972, 1973, 1975; Sjoquist, 1973). These studies, in addition to finding relationships between certainty of punishment, severity of punishment and crime rates analogous to the above studies, claim to separate incapacitation effects from deterrence effects (Ehrlich, 1973) and to find support for capital punishment (Ehrlich, 1975).

Severity of Punishment

In contrast to the rather consistent relationship between certainty and crime rates, severity of punishment is not as reliable a crime deterrent. As suggested in the previously cited studies, severity seems to decrease crime rates only in cases of homicide (Gibbs, 1968; Gray and Martin, 1969; Tittle, 1969; Logan, 1972). Other deterrence studies show a similar lack of association between

increasing severity and crime reduction.

Caldwell (1944) studies the influence of whipping on 24 types of offenses in a Delaware state prison. He finds that whipping did not deter prisoners from committing future crimes even when they were the type of offense that could again result in 20 to 60 lashes[8].

Beutel (1957) compares the incidence of bad cheque writing in three U.S. states (Nebraska, Colorado, Vermont) having different degrees of severity of punishments for fraud. He finds no relationship between severity and number of bad cheques passed per 100,000 population.

Salem and Bowers (1970) attempt to clarify the role of severity in the deterrence process. The relationships of severity, normative climate and the deterrence of five deviant actions (violating alcohol-use rules, getting drunk, stealing library books, marking up library books and cheating) are examined at 838 colleges. With respect to the severity of sanctions, their data indicate that deviance decreases as sanctions against violators become stronger. However, their results also suggest that the strength of sanctions and the strength of collective sentiments are closely related. They conclude that their data find little support for the direct deterrent effect of severity of punishment but rather that sanctions seem to effect reduction in deviance by supporting mores.

In many empirical studies it often proves difficult to separate the effects of certainty and severity of punishment. As shown above, there is some evidence that these variables are more effective in preventing crime when they interact with one another (Gibbs, 1968; Tittle, 1969; Logan, 1972; Gibbs and Erikson,

1973; Attunes and Hunt, 1973). There is even some evidence that severity of punishment is actually suppressed by certainty of punishment (Logan, 1972; 1974; 1975).

Certainty and Severity of Punishment

Other quasi-experimental studies also find evidence that the combined efforts of severity and certainty increase compliance to rules.

In a study of parking violations on a university campus, Chambliss (1966) finds that an increase in certainty (active tagging of faculty cars by campus police) and severity (increased fines and withdrawal of parking priviliges) reduces parking violations among persistent violators. He does note, however, that a considerable portion of the population are unaffected since they never violated the rules anyway. He concludes that most people have moral commitments which compel conformity to particular norms irrespective of sanction fear.

Ross, Campbell and Glass (1970) study the effect of the British breathalyser law of 1967 using interrupted time series data. The legislation provides for traffic violators to be subjected to an on-the-spot breathalyser test and if ultimately convicted in court to receive a mandatory one year license suspension and a stiff fine or four months in gaol. The researchers find the pre-program publicity about increased certainty and severity does result in fewer highway fatalities. However after a number of months, a further testing reveals that when the public perceives that police enforcement is weakening, deterrence effects also lessen.

Perceived Certainty and Severity of Punishment

The results of the above study suggest that even more important than certainty and severity are perceived certainty and perceived severity of punishment in determining whether threats deter crime. For as Zimring and Hawkins (1973) recognize: in order for a threat to dissuade potential violators, they must believe that the threat applies to them and that the enforcers are capable of carrying out the threat.

Unfortunately current survey research does not demonstrate the exact relationship between actual and perceived threats of punishment. It is suggested by Andenaes (1975:354-55) that common sense dictates a high degree of covariation between how perceptions of punishment vary with actual punishment. Indeed, some researchers assume that actual certainty and severity of punishment act indirectly on crime rates by effecting perceptions of certainty and severity (Bankston and Cramer, 1974:264; Logan, 1974; Tittle and Rowe, 1974).

Henshell and Carey (1972) support the proposition that perceived threats are more potent determinants of deterrence than actual threats. They suggest that the general public is unaware of and uniformed regarding what law exist, what sanctions are imposed on us if we break these laws and how severe punishments really are. Supporting their assertions is a study of public knowledge conducted in California by Miller et al (1968). In response to a questionnaire, the study finds that only Adult Authority prison inmates showed any knowledge about maximum and minimum penalties for most types of serious crime and were sensitive to changes in penalties. The California data show the following contrast

in percentage of sample with correct responses: Robbery (Public - 8%, Prisoners - 85%); Assault (Public - 35%, Prisoners - 59%); Rape (Public - 16%, Prisoners - 43%); Forgery (Public - 17%, Prisoners - 50%). Even other typically high risk groups--such as juvenile delinquents (inmates of the Youth Authority penal facilities) and high school students in high crime areas--displayed penal ignorance similar to that of the general public.

Chiricos and Waldo (1972) question the presumption that "potential offenders know or think they know penalties for deviation" and that they act on this knowledge. To test the congruence between crimes committed and perceptions of certainty and severity of punishment, they construct a self-report crime inventory which they administer to university students. This questionnaire attempts to assess an individual's perception of threat of punishment for two common offenses: theft and marijuana use. Evidence is found that perceived certainty of punishment is negatively related to criminality, but this varies by crime and by the index of perceived certainty employed. Specifically they find that perceived certainty of punishment for marijuana use is more sensitive to sanction threat than is theft. This relationship is particularly significant when perceived certainty of punishment is indexed using "perception of one's own criminality likely to result in arrest."[9] Interestingly enough, no relationship is found between certainty of perceptions and sanction deterrence for either crime when "personal knowledge of others punished" is the indicator.

In a re-analysis of Chiricos and Waldo's hypotheses Silberman (1976) employs the same measures of perceived certainty and severity of punishment and

knowledge of others arrested, adding eleven offenses to the crime inventory and an additional set of questions to measure moral commitment. "Employing a complex correlational analysis and a multivariate analysis of variance, the existence and magnitude of the relationships among the variables studied are found to be contigent on the level of analysis (individual versus offense), the level of perceived certainty of punishment, the level of commitment to the legal norm, the type of offense (offense against the person) and sex role[10]." He also finds a general negative association between perceived severity of punishment and crime rate, and a negative relationship between perceived severity of punishment and crime rate to exist on the individual level of analysis for offenses against the person.

Tittle and Rowe (1973) suggest it is the ignorance of sanction characteristics that is the major deterrent mechanism at least with respect to crimes mala prohibita. After all they say, the possibility of punishment is in reality slim and severity minimal. Yet it is the general anxiety stemming from uncertainty that may act as a deterrent. Support for this argument is offered by Jensen (1969) in his inventory administered to school children grades seven through 12. Using self-reported delinquency and police records as indicators of crime rate and questionnaire items to measure perceived certainty of punishment ("that people who break the law are almost always caught and punished") and moral commitment, he finds a negative association between perceived certainty and delinquency. He also finds perceived certainty positively related to respect for law and the police. This suggests that belief in the probability of apprehension

plays a direct role in crime prevention and a direct role in support of moral commitment. This in turn ascribes legitimacy to the existing legal system. However Jensen also finds that with age there is a decrease in the belief that punishment is certain. This suggests the possibility that deterrence may be more a matter of belief than of reality; that actual characteristics of sanctions such as severity and certainty may be important only to the extent that they generate particular kinds of beliefs about the consequence of deviance. In Jensen's words, "one's perception of the world when young (in this case, uncertainty regarding penalties for committing crime but somehow imagining them to be high) affect the 'internalization' of basic attitudes toward the law and that the revision in belief that occurs with age (still uncertain of penalties but feeling their threat reduced) does little to change basic value orientations[11]."

Attitude Toward the Legal Order

It has been suggested and supported by empirical research that sanction threats play a secondary and/or supportive role to normative commitment in generating conformity (Chambliss, 1966; Schwartz and Orleans, 1967; Jensen, 1969; Salem and Bowers, 1970; Tittle and Rowe, 1973; Bankston and Cramer, 1975; Silberman, 1976). In Jensen's previously discussed study, he concludes that non-delinquents more than delinquents are found at an early age to ascribe more legitimacy to the legal order and even when non-delinquents age and their perceptions of sanction threats decline, they continue to support the system.

However there exists conflicting evidence as to the varying importance

of sanctions versus moral commitments.

Schwartz and Orleans (1967) find that although both sanctions and mores induce greater tax return honesty, a conscience appeal is more effective than a sanction threat in generating overall compliance to income tax laws. Similarly, Salem and Bowers (1970) claim their results indicate that severity of punishment is a function of the strength of collective sentiments proscribing a form of behavior rather than formal sanctions.

On the other hand, Tittle and Rowe (1973), assessing the relative effects of a moral appeal and a sanction threat on college classroom cheating, found that moral appeal had no effect on the level of cheating but that the threat of being caught and punished did have a significant effect in deterring cheating. This seems to be particularly applicable to females and to the better students.

Silberman (1976) attempts to clarify this relationship between mores and sanction threats. His results indicate that serious criminal involvement is deterred by the perceived threat of certain punishment regardless of the individual's level of moral commitment, but those who are less morally committed are deterred even more by perceived certainty of punishment. In addition, the deterrent effect of perceived certainty of punishment increases as the level of perceived certainty of punishment (for offenses) increases and as the degree of moral commitment increases. He also finds a direct causal association between threat of punishment and moral support[12].

Type of Peer Association

Silberman (1976) contends his results do support the hypothesis that those who are differentially associated with others who are criminally involved are likely themselves to become so involved. He finds, as do Chiricos and Waldo, that the threat of punishment is an effective deterrent when the referant is an extremely personal one but not when the indicator of perceived certainty of punishment is knowledge of friends arrested. This suggests to Silberman that the effectiveness of sanctions--rather than being strengthened by an individual knowing personally the "actual" certainty of punishment for deviation--is weakened by contact with peers who are criminally involved. Further, he finds that individuals highly committed to the existing legal order do not associate with offenders, and that individuals who do associate with punished offenders are likely to believe that punishment for offenses is relatively severe but not necessarily certain.[13]

Having reviewed some of the issues indigenous to general deterrence, we suggest that the literature portrays the association between sanctions and conformity to be particularly reliable when the elements of perceived threat of certainty and severity are considered within the context of moral and peer commitments. We now propose to re-examine these relationships in order to test the generality of the previous research findings.

FOOTNOTES CHAPTER TWO

[1] Ball (1955:34).

[2] On the other hand, legal responses to specific criminal acts such as instrumental acts may have a generalizing effect on similar or even different offenses (Cousineau, 1976:30). Silberman (1976) finds this effect to be occurring when he uses offense level of analysis. He finds when using offense-specific threat of punishment that marijuana use and shoplifting do not affect crime rates, however, when using general threat of punishment for these offenses, general deterrence occurs.

[3] In this study Chambliss reviews a number of pre-1965 studies on capital punishment, drug addiction laws, parking violations, shoplifting, forgery and white collar crimes. He classifies these criminal acts into two types: expressive acts and instrumental acts. Expressive acts are described as emotionally based acts which represent goals in themselves. These acts are not particularly deterred by threats as they are uncontrollable, non-premeditated and often express a need or frustration for which there is no legal alternative and thus an offender rarely reflects on the possibility of punishment. Instrumental criminal acts, however, are those which are a means to another goal and because they are rational, pre-planned crimes, they can be controlled by sanction threat.

[4] Silberman (1976:454).

[5] Many researchers have offered explanations as to why these early studies should not be used to refute the deterrence argument (Andenaes, 1975:343; Logan and Tittle, 1973:373; Zimring, 1971; Logan, 1971; Gibbs, 1968; Bankston and Cramer, 1974). Paramount among their criticisms are the following:

(1) failure to test for spuriousness;
(2) failure to consider factors of regularity or frequency of application;
(3) failure to test death penalty against less severe penalties (not life imprisonment);
(4) cannot generalize the results because of special circumstances surrounding murder, i.e., these crimes are often crimes of passion, martyrdom, unpremeditated therefore not characteristic of most crimes;
(5) often these studies use unsophisticated and meaningless statistical analyses;
(6) failure to consider certainty or the celerity of actual imposition of death penalty;
(7) these studies are based on biased sample of only those who did deviate

and does not measure that portion of the population who were potential offenders but were deterred by fear of punishment from committing homicide;
(8) to really determine the effectiveness of capital punishment must compare it with no punishment; and
(9) failure to distinguish between general and specific deterrence.

[6]Teevan (1972) indicators are:
Certainty of punishment = percent of court convictions, 1964/number of crimes known to police, 1964-67
Severity of punishment = median time served by offenders, 1964-67
Crime rate = total number of crimes known to police/100,000 population seven years and older.

[7]Logan (1975) also finds his results do not support earlier curvilinear findings nor do they support the tipping effect, i.e., that states must reach a critical level of certainty of punishment before an effect on crime rate can be observed.

[8]This is an interesting but very crude study. In particular this study fails to control for race (percent negro), an important factor in determining who is and is not whipped.

[9]Commenting on Chiricos and Waldo's findings, Teevan (1976) questions the validity of asking for perceptions of the certainty and severity of punishment for "oneself" or "someone like one" due to the possible contamination effect of past deviant behavior on personal perceptions. If one has been deviant previously, then punishment or lack of punishment for that deviance would bias an individual's perception of punishment. Despite Teevan's assertion, he too discovers from sampling Canadian university students on marijuana use and shoplifting, that their perceptions of certainty and severity of punishment "for friends" has little relationship to crime rates. His results indicate that only when using a very general indicator of perceived certainty ("for all Canadians") does the general deterrent effect exist (but again the negative correlation is low).

[10]Silberman (1976:442).

[11]Jensen (1969:199).

[12]Silberman (1976) finds that offenses with high perceived severity of punishment and perceived certainty of punishment are also offenses with high moral support, however, the converse is not true.

[13]Supporting the perception of uncertainty of punishment is Teevan's (1976) finding that his university sample contained more respondents who had been deviant and unpunished than had been deviant and punished.

CHAPTER THREE

PERCEIVED THREAT OF PUNISHMENT, MORAL SOLIDARITY, PEER ASSOCIATION AND DETERRENCE: SOME HYPOTHESES

Terminology and Hypotheses

This thesis proposes to follow in the tradition of recent, self-report perceived threat of punishment studies (Jensen, 1969; Chiricos and Waldo, 1972; Teevan, 1974, 1976a, 1976b, 1977; Silberman, 1976). By perceived threat of punishment we refer to an individual's personal interpretation of the "credibility" and "applicability" of severe and certain punishment (Zimring, 1973). Our reason for studying threat perceptions as opposed to actual threats is three-fold: there is ample evidence that it is "how" one perceives the possibility of punishment that determines his future actions (Henshel and Carey, 1972; Ross et al, 1970; Tittle and Rowe, 1973); there is also evidence that actual punishment, as indicated by aggregate data, is subject to considerable methodological problems which may not be amenable to solution (Cousineau, 1976)[1]; and survey research allows for the measurement of attitudes and personal relationships.

We suggest that if an individual believes he--or someone like him--is likely to receive severe and certain punishment for breaking a law, he will remain law abiding. We further contend that the potency of perceived punishment in its

role as norm enforcer is conditioned by an individual's peer affiliations and attitude toward law and order. The present usage of peer affiliations refers to an individual's basic reference group(s). It will be assumed in this study that the frequency with which one associates with a particular group of friends or acquaintances will contribute to some formation of basic attitudes and shared beliefs (Aronson, 1972:86, 205). By attitude toward law and order we refer to the degree that an individual ascribes legitimacy to the existing legal system (Turk, 1969).

From the theoretical principles presented in Chapter One and the empirical findings reviewed in Chapter Two, the present study will attempt to test the following hypotheses concerning the effectiveness of legal norms[2]:

(1) The greater the perceived certainty of punishment for an offense(s), the less likely the offense will occur.

(2) The greater the perceived severity of punishment for an offense(s), the less likely the offense will occur.

(3) The greater the perceived celerity of punishment for an offense(s), the less likely the offense will occur.

(4) The greater the moral commitment to a law, the less likely the offense(s) will occur.

(5) The greater the frequency of personal association with delinquent peers and/or personal knowledge of friends' delinquency, the more likely the offense(s) will occur.

(6) That a stronger relationship exists between the perceived threat of

punishment (certainty and severity) and reported frequency of offenses that are mala in se as opposed to mala prohibita.

(7) That there is a general pattern of criminal deterrence not specific to any given offense.

Other Variables Related to Crime Rate

A number of extraneous variables not hitherto included in this discussion have traditionally been shown to have an association with punishment and/or crime rate. To ensure against the possibility of obtaining spurious results, the effects of these factors will be statistically controlled in this study:

(1) Sex and age composition of the sample (Goldman, 1969:264-290; Nettler, 1974:98-102) - Nettler (1974) claims "two of the most striking and persistent conditions associated with the risk of committing serious crimes are being male and being young."

(2) Socio-economic status of the sample (Little and Nisekke, 1959:130-135; Nettler, 1974:106-117) - Reiss and Rhodes (1961) find that lower class males are more frequent and serious offenders, more career-orientated offenders. Chilton (1964) in his ecological study of Indianapolis, Baltimore and Detroit finds delinquency most prevalent in zones characterized by low income and low occupational status.

(3) Religiosity of the sample (McLuckie, Benjamin and Wilson, 1972) - McLuckie's data on 30,000 secondary school students suggest that church attendance bears a stronger relationship to drug use patterns than church

affiliations. This study also finds that amount of church attendance varies inversely with crime commission, controlling for SES, age, area of residence and working mothers.

(4) Familial and marital disruption of the sample (Bloom, 1966:307-320; Nettler, 1974:109) - Bloom finds delinquency is associated with such disruptive conditions as, the portion of adolescents not living with both parents and the number of divorced and separated males per 1,000 married, nonseparated males.

(5) Perceptions of informal sanctions (stigmatization effects) - Chiricos and Waldo (1972) suggest that it is important for any deterrence researcher to determine whether individual offenders are actually deterred by the threat of formal punishment or by the social embarrassment of detection. However, these writers do not include this variable in their study as they adopt the position that "if the criminal can be sure that there will be no police action, he can generally rest assured that there will be no social reprobation[3]". However, Zimring and Hawkins (1973:190-194) take issue with this assumption. They cite studies (Martin, 1962; Goffman, 1963) which present some evidence that perceived loss of social status and fear of stigmatization can be effective deterrents.

The Causal Relationship Between Crime and Punishment

Logan (1974:9) stresses that there is no straightforward interpretation of findings pertaining to the deterrence hypothesis. In particular, no empirical

studies (to date) have conclusively demonstrated that punishment threats (perceived or actual certainty and severity) depress crime commission. In fact, it is quite probable that the relationship between certainty-severity and crime involvement is reciprocal. In this sense, it could be that the amount of undetected crime committed by respondents lowers perceived certainty (or severity) of punishment. Similarly, this same volume of illegal activity may decrease police efficiency and further increase the likelihood of respondents escaping detection. Unfortunately, the present survey data--which does not measure size and thoroughness of crime detection agencies--cannot control for these confounding factors. Hence, direction of causation with respect to the deterrence hypothesis must remain an untested assumption in this thesis.

Test of Elaboration Effects

Despite the causal problem described above, the elaboration techniques described by Rosenberg (1968) do allow for some tentative tests of spuriousness and interaction among the variables included in the present study. One possibility is that certainty and severity of punishment interact to produce a stronger negative relationship with crime involvement (Tittle, 1969; Logan, 1972). In addition, it may be that informal sanctioning and/or moral commitment to existing legal codes intervene in this formal sanctioning process (Zimring, 1971; Zimring and Hawkins, 1973; Andenaes, 1975). Finally, it has also been suggested that association with criminal peers lowers moral commitment to legal norms and increases the perception of severe punishment threats (Silberman, 1976).

Having now defined our terms and propositions we turn to a description of the data and procedures needed to test the deterrence hypotheses.

FOOTNOTES CHAPTER THREE

[1]Cousineau suggests the following methodological problems associated with using aggregate data:

(1) Official statistics are particularly sensitive to changes in the reporting of crime by the police. Logan (1974) devalues this criticism by suggesting that "random" error across states would cancel differences in reporting and recording. However he presents no evidence to support this contention.

(2) Official statistics limit research to mostly serious crimes. This is particularly devastating to the present study, inasmuch as our sample may include those who commit minor as opposed to serious crimes.

(3) Aggregate data is often "contaminated" by single offender admitting to numerous crimes and a number of offenders committing a single crime or by "plea bargaining" which changes the original offense.

(4) Aggregate data does not allow for differentiation between initial offenders and recidivist offenders. This is a crucial distinction as we pointed out in Chapter One of this thesis.

(5) Aggregate data does not allow for a clear distinction between crimes committed by adults versus delinquents. There is an additional problem in Canada with regard to this criticism. Different provinces have different ages at which they regard males and females as adults.

(6) It is impossible to use "offender rate" using official statistics. Unfortunately, in deterrence research the "offender rate" is preferable to using "offense rate."

[2]Silberman (1976:457-458).

[3]Andenaes (1961:961).

CHAPTER FOUR

DATA AND METHODOLOGY

Sample and Questionnaire Description

Data for this study came from questionnaires administered to 252 students enrolled at The University of Alberta and Grant MacEwan College.

The University sample was selected from a possible 12 introductory sociology classes offered in the winter session of 1977. Ninety-nine students were present in the classroom the day questionnaires were administered, approximately 70% of the official registration figure. All subjects were asked by the researcher to fill out the questionnaire and submit it anonymously to the front of the classroom. The response rate for the questionnaire items ranged between 89%[1] and 100% (see frequency distribution, Appendix C). No special problems occurred and all 99 questionnaires were included in the analysis.

In total, eight Grant MacEwan classes were selected (by convenience) from a variety of possible programs available at the Assumption and Millwood Campuses, during the 1977 winter session. The subsamples included students enrolled in introductory sociology, psychology, criminology, nursing, bookkeeping, audio-visual technology and business management courses. The few students who were selected twice were asked not to fill out the questionnaire, making a total of

164 respondents (attendance averaged 78%). Unfortunately, 11 questionnaires had to be discarded because of incompleteness or obvious incongruity of response: three subjects answered "no" to committing specific crimes then proceeded to answer "yes" to subsequent arrest and conviction for these crimes. Another two respondents were eliminated as they answered "yes" to being "kicked out of school," but claimed never to have committed offenses. The remaining sample reduction resulted from subjects' not completing questions pertaining to either the major independent or dependent variables.

The response rate for Grant MacEwan questionnaire items ranged from 80%[2] to 100% and 153 questionnaires were finally included in the analysis (see frequency distribution, Appendix D).

In addition to the 252 subjects described above, 38 first-year social science students enrolled in an introductory criminology class (100% attendance) at Grant MacEwan College were administered the questionnaire. This pre-test was used to determine if selected items--in particular, the individual crime categories--would elicit enough divergent responses to justify their inclusion in the present study. These 38 pre-test respondents were not included in the final sample.

As demonstrated by the frequency distributions presented in Appendix B, sufficient variation does exist in the response to all items pertaining to the crime inventory, moral commitment index, general deterrence indices and socio-economic status indicators.

Pursuant to these findings, the questionnaire (see Appendix A) was

retained as presented in the pre-test with only two minor revisions: A question was inserted asking respondents to state their occupation (if applicable) prior to and/or during their present enrollment in college[3]. In addition, the peer involvement indicator was revised[4] and all subjects were instructed to answer this question irrespective of whether they have ever committed the particular crime.

There may be bias in the samples due to problems inherent in self-report questionnaires. A crucial problem associated with any self-report study is the honesty of responses. This is further complicated by inaccurate memories, differential interpretation of questions, social desirability of certain responses and emotion surrounding the subject matter (Nettler, 1974:93). The present study is particularly prone to criticisms of this sort because of the possible fear of exposure for antisocial behaviour.

To minimize these possible response biases, we tried to impress upon our respondents the complete anonymity and confidentiality of all answers. By repeated assurances that the papers would be destroyed once answers were transformed into statistical form and that data would not be shared, it was felt some anxiety was diminished. Finally, all students were given the opportunity to opt out of the study if they so wished. However, no student declined to participate and this issue did not present a problem.

To further ensure consistency of responses, we included self-report items which, although not related to crime commission per se, purport to measure an individual's degree of conservatism or anti-social behaviour. It was hoped that a visual scanning of an individual's answers to "misbehaviour in school," and to

"admitted criminality," allowed us some indication of the internal consistency and veracity of an individual's responses. Those respondents who admitted to misbehaviour in school but admitted to no crime involvement were not included in the study.

In addition to ethical considerations, there is also the problem of congruity of current versus past beliefs (Silberman, 1976:444) and "contamination effects" resulting from differing consequences of past deviations (Teevan, 1976). Teevan claims that if one has been deviant previously, then punishment or lack of punishment for that deviance would bias an individual's perception of punishment. To ensure consistency of past and present beliefs Teevan suggests that respondents be asked how they felt "before" they committed deviant acts as compared to feelings "after." However, one problem with this method of questioning is the reduction in cognitive dissonance (Festinger, 1957:92) which decreases the likelihood of an individual maintaining beliefs which are contradictory (as Teevan himself recognizes). In this respect, it is conceivable that one would unknowingly adjust prior and present beliefs to coincide with current attitudes. For the purpose of this study, we assume some constancy of current and past beliefs. To support our stance there is some evidence that the memory of past events and beliefs are influenced by present beliefs (Aronson, 1972:98-102); and to the extent that this occurs, it is impossible (without the appropriate longitudinal data) to measure perceived attitudinal change using a cross sectional sample (Babbie, 1973:64).

Variable Description

The measures of certainty, severity, moral commitment, and crimes committed (crime inventory) are similar to those used by Chiricos and Waldo (1972) and Silberman (1976). The peer involvement indicator (see footnote 4) and the control variables have been revised and one further independent variable, celerity, added. Also, the method of index construction differs slightly from Silberman's study where (we assume) he discards any case that includes a missing value. Instead of risking such a reduction in sample size, we protect against bias from missing values by summing the individual items scores and dividing by the number of non missing responses to the items.

This commonality of data--both researchers also used students--and methodology allows for a test of reliability of findings and a cross cultural comparison.

The Crime Inventory

Eleven offenses are included in the self-report crime inventory. All offenses are included in the construction of the index variables. The frequency of occurrence of each specific crime in the respective samples--University of Alberta and Grant MacEwan--are: drinking under the legal age (86.9%, 79.1%), drunk and disorderly (46.5%, 35.3%), smoking pot (56.6%, 55.5%), using "hard" drugs (16.2%, 20.9%), vandalism (22.2%, 14.4%), shoplifting (46.4%, 46.5%), theft under $50 (19.2%, 24.9%), theft over $50 (3%, 2%), sexual intercourse with a minor (17.2%, 11.1%), joyriding (5.2%, 5.2%) and assault (3.0%, 3.3%).

A Typology of Offenses

Gibbs (1966) suggests one distinction between serious and minor offenses is the degree of moral condemnation they evoke. Thus acts mala in se are those forbidden by both law and public mores, while acts mala prohibita are proscribed only by law. Assuming moral legitimacy to be a function of a specific time, place and situation, it is necessary to determine the degree to which a population professes repugnance to a law, and the proportion (of the same population) that actually commit the act. The ranking of each offense by percent disapproving of offense and percent committing offense is presented for the University and Grant MacEwan samples in Tables 1 and 2. For classification purposes, acts mala prohibita will be defined as those which less than 50% profess disapproval of and which 50% or more have committed at least once. Only two offenses--drinking under age and smoking pot--meet these stringent requirements and are hereafter referred to as mala prohibita.

TABLE 1

RANKING OF OFFENSES BY PERCENT MORALLY DISAPPROVING OF THE OFFENSE

	University of Alberta			Grant MacEwan College		
Offense	N	%	Rank	N	%	Rank
Drinking under age	9	9.1	1	27	18.1	1
Drunk and disorderly	31	31.3	4	84	55.3	4
Smoking pot	19	19.8	2	50	33.8	3
Using "hard" drugs	66	66.7	8	112	75.2	8
Vandalism	85	85.9	11	124	82.7	11
Shoplifting	62	62.6	6	109	71.7	7
Theft under	64	64.6	7	106	69.7	6
Theft over	82	82.8	10	120	79.5	10
Joyriding	49	51.6	5	98	66.2	5
Assault	78	78.8	9	118	78.1	9
Sex with minor	24	24.2	3	45	31.9	2

TABLE 2

RANKING OF OFFENSES BY ACTUAL PERCENT COMMITTING THE OFFENSE

	University of Alberta			Grant MacEwan College		
Offense	N	%	Rank	N	%	Rank
Drinking under age	86	86.9	1	121	82.4	1
Drunk and disorderly	46	46.5	4	54	35.3	4
Smoking pot	56	56.6	2	85	55.6	2
Using "hard" drugs	16	16.2	7	32	20.9	6
Vandalism	22	22.2	5	22	14.4	7
Shoplifting	46	46.5	3	71	46.4	3
Theft under	9	9.1	8	38	24.8	5
Theft over	3	3.0	10	10	6.5	9
Joyriding	5	5.2	9	8	5.2	10
Assault	3	3.0	11	5	3.3	11
Sex with minor	17	17.2	6	17	11.1	8

Silberman (1976:454) further suggests the distinction between mala in se and mala prohibita to be based on a "continua of legality and morality."[5] Assuming that "percent actually committing an offense" is a more reliable predictor of public mores (as Silberman contends), the typology below presents a crude indication of the degree of moral acceptance associated with each offense based on a scale of one to four.

TABLE 3

A TYPOLOGY OF MORAL LEGITIMACY

Offenses	Offenses	
	Committed Often	Committed Rarely
	(1)	(3)
Verbally Acceptable	Drinking under age Smoking pot	Sex with minor Drunk and disorderly
	(2)	(4)
Verbally Rejected	Shoplifting	Using "hard" drugs Vandalism Theft under Joyriding Theft over Assault

As demonstrated by this typology, three additional offenses--shoplifting, sex with a minor and drunk and disorderly--are neither totally acceptable nor rejected by both samples. These offenses we will not classify, except to suggest a quasi-legitimate status. However, the remaining six offenses--using "hard" drugs,

vandalism, theft under $50.00, theft over $50.00, joyriding and assault--despised by more than 50% of the samples and infrequently committed (by less than 50% of the samples), shall henceforth be considered mala in se.

Independent Variables

There are three indicators of perceived certainty of punishment. The first question asks respondents from the University and Grant MacEwan to estimate the probability of arrest for the populace with respect to crime in general. The means for the two samples are 31.97% and 40.94%, respectively. The subjects are then requested to estimate the probability of conviction for the populace with respect to crime in general. The respective means are 43.27% and 43.89%. Finally respondents are asked if they believe that "someone like oneself[6]" would be "very likely," "likely," "unlikely," or "very unlikely," to be arrested for committing a specific crime. By scoring the responses to each item 4, 3, 2, 1 respectively and dividing by the number of valid observations (non-missing responses), a summated scale is constructed called the Certainty of Punishment Index. (The means are presented in Table 4.) To replicate Silberman's (1976) study as much as possible, only the Certainty of Punishment Index is used extensively as an indicator of certainty of punishment in this study. In order to test for third factor effects and determine the mean crime scores for respondents having different certainty of punishment levels, the certainty scores are dichotomized above and below the mean value, with 42% of the University and Grant MacEwan samples included in the "likely" category. For all other

statistical analyses the original categorization is maintained.

TABLE 4

MEAN SCORE ON CERTAINTY OF PUNISHMENT INDEX

	University of Alberta	Grant MacEwan
All offenses	2.42	2.30
Drinking under age	1.50	1.67
Drunk and disorderly	1.99	2.22
Smoking pot	1.66	1.78
Using "hard" drugs	2.25	2.10
Vandalism	2.54	2.48
Shoplifting	2.44	2.53
Theft over	2.34	2.34
Theft under	2.96	2.72
Joyriding	2.46	2.44
Assault	3.05	2.78
Sex with minor	1.77	1.90

Perceived severity of punishment is measured by responses to the belief that "someone like oneself" is "very likely," "likely," "unlikely," or "very unlikely," to get the maximum Canadian penalty if convicted of a specific offense. Again, a summated scale--with values ranging from 4 to 1--is constructed called the Severity of Punishment Index. (The index means are presented in Table 5.) In order to test for third factor effects and determine the mean crime scores for respondents having different severity levels, the severity of punishment scores are dichotomized into "likely" or "unlikely" with 55% of the University and 52% of the Grant MacEwan samples included in the "likely" category.

TABLE 5

MEAN SCORE ON SEVERITY OF PUNISHMENT INDEX

	University of Alberta	Grant MacEwan
All offenses	2.54	2.55
Drinking under age	1.71	1.90
Drunk and disorderly	2.01	2.20
Smoking pot	2.39	2.33
Using "hard" drugs	3.01	2.86
Vandalism	2.71	2.63
Shoplifting	2.48	2.45
Theft under	2.39	2.34
Theft over	2.97	2.69
Joyriding	2.30	2.30
Assault	2.92	2.72
Sex with minor	2.44	2.60

Perceived celerity of punishment is based on the belief that "someone like oneself" has "no delay," "a moderate delay," or "a long delay" between a charge and sentencing for specific offenses. By scoring the responses to each item 3, 2, 1 respectively and dividing by the valid observations, a scale is constructed called the Celerity Index. (The means are presented in Table 6.) Thirty-nine percent of the University sample and 37% of the Grant MacEwan sample perceived no delay while 58%/59% and 3%/4% perceived a moderate and long delay, respectively.

TABLE 6

MEAN SCORE ON CELERITY OF PUNISHMENT INDEX

	University of Alberta	Grant MacEwan
All offenses	2.36	2.33
Drinking under age	2.62	2.66
Drunk and disorderly	2.60	2.65
Smoking pot	2.40	2.29
Using "hard" drugs	2.12	1.95
Vandalism	2.21	2.16
Shoplifting	2.55	2.45
Theft under	2.47	2.39
Theft over	2.02	1.97
Joyriding	2.34	2.31
Assault	1.85	1.93
Sex with minor	1.77	1.87

To determine the degree of moral commitment, subjects are asked to rate each of the offenses according to whether it is "always wrong," "usually wrong," "sometimes wrong," or "not at all wrong." The scores for these items are 4, 3, 2, 1 and a summated scale called the Morality Index is constructed. (The means are presented in Table 7.)

TABLE 7

MEAN SCORE ON MORALITY INDEX

	University of Alberta	Grant MacEwan
All offenses	3.06	3.16
Drinking under age	2.20	2.54
Drunk and disorderly	3.13	3.43
Smoking pot	2.38	2.65
Using "hard" drugs	3.62	3.69
Vandalism	3.83	3.81
Shoplifting	3.53	3.66
Theft under	3.59	3.61
Theft over	3.82	3.75
Joyriding	3.26	3.47
Assault	3.71	3.75
Sex with minor	2.81	2.99

The final independent variable, peer involvement, is operationalized by summing the number of offenses for which the respondent has known at least one person who has been arrested and/or convicted. Scores on the Peer Involvement Index scale range from 22 (no association) to 11 (known someone convicted for every crime). The mean scores for the University and Grant MacEwan samples are 20.46 and 20.45, respectively.

Dependent Variables

There are two self-report measures of crime involvement used in this study. The Criminal Involvement Index is constructed by summing the number of offenses each respondent admits to transgressing, based on a scale of 1 (never commits the offense), 2 (committed the offense once), 3 (occasionally commits the offense)

and 4 (frequently commits the offense). The scores thus range from a minimum of 11 to a maximum of 44.

The offense-specific crime involvement consists of an individual's score (1 - 4) for any given offense. The mean scores for both indices are presented in Table 8. For the purpose of testing for the effects of third factors the crime involvement items are amalgamated into "no crime involvement" and "some crime involvement" as 77% of the University and 80% of the Grant MacEwan samples claimed to have committed few offenses.

TABLE 8

MEAN SCORE ON CRIME INVOLVEMENT INDICES

	University of Alberta	Grant MacEwan
Criminal Involvement Index	17.03	17.14
Drinking under age	3.07	2.97
Drunk and disorderly	1.79	1.69
Smoking pot	2.18	2.23
Using "hard" drugs	1.26	1.42
Vandalism	1.30	1.22
Shoplifting	1.69	1.75
Theft under	1.29	1.38
Theft over	1.03	1.11
Joyriding	1.07	1.10
Assault	1.04	1.06
Sex with minor	1.30	1.22

Control Variables

Questions pertaining to respondents' age, sex, socio-economic status, religiosity, family stability and perceived informal sanctioning are also included

on the questionnaire (see Appendix C and D for the frequency distributions.)

Informal sanctions are based on the belief that "someone like oneself" is "very likely," "likely," "unlikely," or "very unlikely" to lose the respect of their parents and friends if they commit a specific offense. By scoring the responses to each item 4, 3, 2, 1 respectively and dividing by the number of valid cases, a summated scale is constructed. The mean scores of the University students are 3.20 and 2.63 for perceived sanctioning of parents and friends, and 3.12 and 2.44 for perceived sanctioning of parents and friends of Grant MacEwan students.

This study employs three measures of socio-economic status--father's occupation, family income and father's education. Father's occupation is rated on a scale from 1 to 9 based on a "prestige score" as suggested by the 1960 Hodge-Siegel-Rossi prestige system presented in the National Data Program for the Social Sciences (1972) occupational classification system. Family income is divided into six categories--under $10,000, $10,000-15,000, $15,000-20,000, $20,000-25,000, $25,000-30,000 and over $30,000. (See Appendices C and D for the respective income distributions for each sample.) In order to control for the effect of third variables, income is dichotomized into low (under $20,000 -- containing 42% of University and 55% of Grant MacEwan respondents) and high. Finally, father's education is based on the number of years of formal education that respondent's father or guardian completed, (see Appendices C and D for the respective distribution of percentage values).

Family stability is determined on the percent of the sample living in a

single parent household for an unspecified number of years. However, only 3% of the University and 6% of the Grant MacEwan samples admit to a "broken home" situation and the variable is therefore discarded.

Religiosity, indicated by a subject's average church attendance, is dichotomized into high (once a month or more - 23% and 29%) and low attendance. Age is trichotomized into young (20 years and under - 81% and 45%), middle-age (21 through 30 - 19% and 31%) and old (over 30 years - 0% and 24%). Sex is dichotomized into males (48% and 33%) and females (52% and 67%).

Statistical Analysis

To test the degree of association and strength of relationship between the variables, both bivariate and multivariate techniques of analysis are employed. Although the measurement level of the majority of the independent variables (morality, certainty, severity, celerity) and dependent variable (offense-specific crime involvement) is ordinal, Hagan (1974:65-68) defends the use of interval level methods on such data. He cites Labovitz (1967, 1969, 1970) who "advocates the treatment of ordinal variables as interval scales for the following reasons:

(1) it allows the use of more powerful, sensitive, better developed and interpretable statistics with known sampling error;

(2) it allows a greater versitility in statistical manipulation."

To substantiate these arguments, Boyle (1970) empirically examines the effects of analyzing a set of ordinal data in three ways:

(1) using a tabular technique;

(2) using a dummy variable regression analysis; and

(3) assigning intervals to ordinal variables and applying regression techniques.

He finds that although the tabular analysis led to misleading causal inferences, the latter two approaches produced very similar results.

Initially, the two samples are compared to determine if they derive from the same or similar population(s) using the difference-of-means test (Blalock, 1972:220-222). Spearman's rho (ρ) correlations are then computed between independent, dependent and control variables to assess the strength of the original two-variable relationships, the higher order partial relationships and the marginal relationships. Spearman's rho is chosen as it is a measure of association used to relate two ordinal scales and it gives the best approximation to the product-moment correlation of all available ordinal measures (Nie et al, 1976:289; Blalock, 1972:426). This is particularly important in the present study for two reasons:

(1) both ordinal and interval level statistics are required in the course of analyses; and

(2) the majority of independent and dependent variables used are indexed and thus contain a large number of ranks. Although for these same reasons Pearson's product-moment correlation could have been chosen, Spearman's rho is preferred due to the necessity of also analyzing specific-offense variables containing a smaller number of categories. Normally the variables with few ranks

and large number of ties would also present problems for rho by depressing correlation values (Gibbons, 1976:279). However, the statistical computer program that was used (SPSS NONPAR) automatically corrects for ties and thus lessens the possible error (Nie et al, 1976:289).

In addition to the correlational analyses, an analysis of variance is employed to measure the combined and conditional effects (if they exist) of those independent and control variables shown previously to be related to the dependent variable. Complimenting this latter technique, a breakdown of dependent variable mean scores is calculated on the dichotomized[7] interacting variables to further specify the conditional relationships.

Details of relevant findings--pertaining to the above statistical analysis --are presented in Chapter 5 and 6.

FOOTNOTES CHAPTER FOUR

[1]The response rate for all individual items is 95% or better except for "estimated family income," which is 88.9%, reflecting subjects' general lack of knowledge regarding their family income, (many admit on their questionnaire that this is indeed the case).

[2]As with the University of Alberta sample a low response rate of 79.08% and 83.67% is received on questions pertaining to "knowledge of parental education and income," reflecting subjects' ignorance about these matters. In addition, there is a 92.16% response rate for "moral commitment" to law punishing offenders who have sex with a minor This reflects 12 respondents wrestling with their consciences as to whether "sex"--albeit with a minor-- is ever immoral. Otherwise the response rate is 95% or better.

[3]This question was later discarded as only 5% of the final sample answered this item.

[4]The operationalization of peer involvement is changed from: "Did you know anyone personally who was arrested and/or convicted for this before or while you were doing it?" to "Do you know anyone personally who was arrested and/or convicted for this?"

[5]Silberman (1976:454).

[6]Teevan (1976) questions the use of perceptions of certainty and severity for "oneself," because if one has been deviant, his response should be conditioned by whether he is detected or not. Teevan recommends the use of a generalized perception term such as "for all Canadians." There are two problems with this recommendation. First, it seems illogical to compare an individual's perception of certainty of punishment "for all Canadians" to a personal crime rate. Secondly, deterrence theory suggests that the lowest frequency of admitted criminality is expected for those who perceive the greatest likelihood of "someone like themselves" being caught and punished if "they" are deviant. This expectation is supported by empirical evidence (Chiricos and Waldo, 1972: Silberman, 1976). In particular, Claster (1967:83-84) finds his training school sample to overestimate

the chances of arrest for the "general public" and perceive significantly lower probabilities of being caught "themselves" for a hypothetical offense than does a sample of non-delinquents. This unexpected perception by delinquents suggests that the use of "all Canadians" may obscure the "true" personal perceptions of the individual respondents.

[7] To facilitate the comprehension of this tabular-type analysis, all variables are reduced to two categories by collapsing adjacent cells or using either the median or mean value as the cutting point, depending on the presence or absence of extreme values (degree of skewness) or the number of categories (Blalock, 1973:68-72, 74). In particular, the use of 2X2 tables allows for the control of third (or more) variables--suspected contaminating factors-- and still retain sufficient cell population to allow analysis. Also, limiting numbers of cells increases clarity of visual understanding.

CHAPTER FIVE

DATA ANALYSIS

This chapter will begin with a comparison of the University and Grant MacEwan samples to determine if their questionnaire responses can be merged for the remaining analyses.

Hypotheses one through five (discussed on page 39) will then be tested using zero order rho correlations calculated between the perceived moral commitment index, perceived peer involvement index, perceived certainty of punishment index, perceived severity of punishment index, perceived celerity of punishment index and the dependent variable of self-reported crime involvement index for each sample. The control variables--sex, age, informal sanctioning, socio-economic status and religiosity--will similarly be correlated with the independent and dependent variables for both samples. Within the context of each hypothesis, any extraneous or independent variable shown to demonstrate a significant association with crime involvement, morality, peer involvement and/or punishment threats will then be introduced into the two variable relationships, testing for possible suppressor, antecedent, intervening or conditional effects.

To complete the process of elaboration (Rosenberg, 1968:21), all relevant variables--variables previously shown to be significantly associated with

crime involvement--will be assessed simultaneously, using the technique of analysis of variance. In this manner, we will evaluate the unique contribution of each variable, the cumulative contributions of the entire variable set and the contributions of the various interactions between variables. In addition, a breakdown of mean crime scores will be presented to specify the nature of the significant interaction effects occurring in the analyses of variance.

Finally, we will calculate the zero order rho correlations between the independent and dependent variables for 11 offense categories (drinking under age, drunk and disorderly, smoking pot, using "hard" drugs, vandalism, shoplifting, theft under and over $50, joyriding, assault and sex with a minor) to determine if the earlier findings are specific to particular types of crimes or apply to crime in general (hypotheses six and seven).

A Test of Sample Differences

A test of mean and variance differences between the University and Grant MacEwan samples is computed for each independent and dependent index variable. It is assumed, prior to the test, that the sample means and variances are the same (Ho: $\mu_{\text{U of A}} = \mu_{\text{GMC}}$, $\sigma^2_{\text{U of A}} = \sigma^2_{\text{GMC}}$). Table 9 reveals that although the means of crime rate, certainty of punishment, severity of punishment and peer involvement are similar, their standard deviations differ sufficiently to reject the hypothesis that the two samples are drawn from the same population. The same conclusion applies to the morality responses, where the means are significantly different at the .001 level. Although the null hypotheses

for celerity of punishment cannot be rejected at the .05 level, the standard deviations are still too sufficiently different ($F = 1.32$, $P = .13$) to risk amalgamating the samples.

Given that the null assumption is rejected for most of the variables--crime involvement, certainty, severity, morality and peer involvement--the remaining statistical evaluations will consider each sample as distinct and the appropriate comparisons will be discussed.

An Initial Consideration of the Deterrence, Morality and Peer Involvement Hypotheses

Intercorrelations (rho) between the perceived certainty of punishment index, the perceived severity of punishment index, the perceived celerity of punishment index, the morality index, the peer association index and the crime involvement index for the University and Grant MacEwan samples are shown in Tables 10 and 11. Tables 12 and 13 present the zero order rho associations between the index variables and factors traditionally linked to crime commission--sex, age, informal sanctioning by parents, informal sanctioning by peers, father's education, father's occupation, family income and religiosity--for each sample.

The results of Tables 10, 11, 12 and 13 permit a preliminary test of hypotheses one through five (see page 39). The significant associations between the variables included in Tables 12 and 13 allow for a selection of test factors to be considered in the elaboration process.

An initial examination of the tables shows that perceived celerity of punishment, age, father's education and father's occupation are not significantly

TABLE 9

COMPARISON OF MEANS AND STANDARD DEVIATIONS FOR THE UNIVERSITY AND GRANT MACEWAN SAMPLES ON INDEPENDENT AND DEPENDENT VARIABLES

		Mean	Standard Deviation	* F Value	P	T Value	Degrees of Freedom	P
Crime involvement	University (99)	17.03	4.28	1.50	.03	- .18	250	.86
	Grant MacEwan (153)	17.14	5.25					
Perceived certainty	University (99)	2.27	.38	2.67	.001	.11	249	.92
	Grant MacEwan (152)	2.27	.63					
Perceived severity	University (97)	2.47	.50	2.70	.001	.07	243	.95
	Grant MacEwan (148)	2.46	.83					
Perceived celerity	University (99)	2.27	.38	1.32	.13	.40	247	.69
	Grant MacEwan (150)	2.25	.43					
Perceived morality	University (97)	3.25	.39	1.18	.40	- 3.50	217	.001
	Grant MacEwan (132)	3.44	.36					
Peer involvement	University (99)	20.46	1.61	1.64	.009	.01	250	.99
	Grant MacEwan (153)	20.45	2.06					

$$F = \frac{\text{larger } S^2}{\text{smaller } S^2}$$

related to any independent, dependent or control variable in either sample[1]. These factors are therefore omitted from further analysis.

TABLE 10

CORRELATION MATRIX (RHO) FOR INDEX VARIABLES, UNIVERSITY SAMPLE (N = 99)

	Morality	Certainty	Severity	Celerity	Peer Involvement
Certainty	- .09				
Severity	- .19*	.41***			
Celerity	.01	- .14	.003		
Peer involvement	.37***	.05	.03	- .02	
Crime involvement	- .49***	- .09	.01	.01	- .77[a] ***

[a]The negative correlation infers that the higher the crime involvement score the greater the likelihood of respondents' answering "yes" to knowing criminal peers.

*P < .05

**P < .01

***P < .001

TABLE 11

CORRELATION MATRIX (RHO) FOR INDEX VARIABLES, GRANT MACEWAN SAMPLE (N = 153)

	Morality	Certainty	Severity	Celerity	Peer Involvement
Certainty	.29***				
Severity	.22**	.44***			
Celerity	.004	- .01	.08		
Peer involvement	.57***	.27***	.13	- .05	
Crime involvement	- .65***	- .32***	- .18*	- .01	- .79[a] ***

[a]The negative correlation infers that the higher the crime involvement score the greater the likelihood of respondents' answering "yes" to knowing criminal peers.

*P < .05

**P < .01

***P < .001

TABLE 12

SPEARMAN CORRELATIONS BETWEEN CONTROL VARIABLES AND MORALITY INDEX, PEER INVOLVEMENT INDEX, CERTAINTY OF PUNISHMENT INDEX, SEVERITY OF PUNISHMENT INDEX, CELERITY OF PUNISHMENT INDEX AND CRIME INVOLVEMENT INDEX, UNIVERSITY

	Sex (N)	Age	Parental Sanctions	Peer Sanctions	Education	Occupation	Income	Religiosity
Crime involvement	-.32*** (98)	-.05 (99)	-.14 (99)	-.31*** (99)	.07 (93)	.06 (95)	.17* (88)	-.17* (97)
Morality	.07 (98)	.09 (99)	.43*** (99)	.35*** (99)	.03 (93)	.07 (95)	-.07 (88)	.16 (97)
Peer involvement	.33*** (98)	.02 (99)	.21* (99)	.36*** (99)	-.05 (93)	-.01 (95)	-.19* (88)	.12 (97)
Certainty	.13 (98)	-.12 (99)	-.03 (99)	.23* (99)	.11 (93)	-.06 (95)	.04 (88)	-.02 (97)
Severity	.27** (96)	-.05 (97)	-.10 (97)	.15 (97)	.13 (91)	-.09 (93)	.06 (86)	-.07 (95)
Celerity	-.15 (98)	.07 (99)	.04 (99)	-.15 (99)	-.12 (93)	-.08 (95)	-.11 (88)	.05 (97)

*P < .05

**P < .01

***P < .001

TABLE 13

SPEARMAN CORRELATIONS BETWEEN CONTROL VARIABLES AND MORALITY INDEX, PEER INVOLVEMENT INDEX, CERTAINTY OF PUNISHMENT INDEX, SEVERITY OF PUNISHMENT INDEX, CELERITY OF PUNISHMENT INDEX AND CRIME INVOLVEMENT INDEX, GRANT MACEWAN

	Sex (N)	Age	Parental Sanctions	Peer Sanctions	Education	Occupation	Income	Religiosity
Crime involvement	-.07(153)	-.09(152)	-.21** (150)	-.46*** (151)	-.09(121)	-.08(143)	-.06(128)	-.17* (144)
Morality	-.02(132)	.02(131)	.36*** (129)	.37*** (130)	-.05(105)	-.02(125)	-.05(110)	.15* (124)
Peer involvement	-.09(153)	-.21** (152)	.20** (150)	.44*** (151)	.13(121)	.12(143)	.10(128)	.09 (144)
Severity	-.03(148)	.02(147)	.15* (145)	.15* (148)	-.04(116)	-.07(138)	-.08(123)	.19* (139)
Celerity	-.12(150)	-.02(149)	.12 (148)	.17* (150)	-.02(118)	.03(140)	.02(125)	-.10 (141)

*P < .05

**P < .01

***P < .001

Certainty of Punishment and Crime Involvement: University Sample

The weak rho value (-.09) indicates no apparent relationship between perceived certainty of punishment and self-reported crime involvement in the University sample (Table 10). However, perceived certainty does have a moderate positive correlation with perceived severity of punishment (rho = .41 , $p < .001$) which could signal, as previous research suggests (Tittle, 1969; Logan, 1972), a deterrence effect of certainty under certain conditions of severity. Controlling for this variable in Table 14, we find that when punishment is perceived to be severe, certainty increases its negative association with crime involvement from the zero-order rho value of - .09 to - .28 ($p < .01$).

TABLE 14

SPEARMAN CORRELATIONS FOR PERCEIVED CERTAINTY OF PUNISHMENT INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING FOR PERCEIVED SEVERITY OF PUNISHMENT INDEX[a], UNIVERSITY

Severity	Certainty (- .09) Rho (N)
Low	- .05 (48)
High	- .28** (49)

[a]Severity is dichotomized above and below the median value.

**P < .01

Table 12 shows that perceived certainty of punishment has a significant positive association with informal peer sanctioning (rho = .23, $p < .05$). Since peer sanctioning is moderately related to crime involvement (rho = - .31, $p < .001$) in the University sample, there may be a possible suppressor effect due to the marginal relationships being opposite in sign. We find, instead, that when peer sanctioning is controlled for, a slight but statistically insignificant conditional relationship emerges. In Table 15 the admitted criminality decreases when punishment is certain and loss of peer respect imminent, i.e., the rho of -.09 increases to -.21.

TABLE 15

SPEARMAN CORRELATIONS FOR PERCEIVED CERTAINTY OF PUNISHMENT INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING FOR PERCEIVED INFORMAL SANCTIONING BY PEERS INDEX[a], UNIVERSITY

Peer Sanctions	Certainty (-.09) Rho (N)
Low	.08 (56)
High	- .21 (43)

[a]Informal peer sanctioning is dichotomized above and below the mean value.

Tables 10 and 12 demonstrate that all other variables are unrelated to perceived certainty. We conclude, therefore, that for University students certain punishment appears to deter crime only when punishment is perceived severe.

Certainty of Punishment and Crime Involvement: Grant MacEwan Sample

The negative relationship expected between perceived certainty of punishment and crime involvement is evident in the Grant MacEwan sample (rho = .32, $p < .001$). Other moderate associations also emerge in Table 11, which may alter this initial finding: Certainty has a rho value of .29 ($p < .001$) with morality, .44 ($p < .001$) with severity and .27 ($p < .001$) with peer involvement. Similarly, these same independent variables are significantly correlated with crime involvement: Crime involvement has a rho value of - .65 ($p < .001$) with morality, - .18 ($p < .05$) with severity and - .79 ($p < .001$) with peer involvement. Table 16 presents the certainty-crime involvement relationships for the Grant MacEwan sample holding constant the effects of moral commitment, perceived severity and peer involvement.

TABLE 16

SPEARMAN CORRELATIONS FOR PERCEIVED CERTAINTY OF PUNISHMENT INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING[a] FOR MORALITY INDEX, SEVERITY OF PUNISHMENT INDEX AND PEER INVOLVEMENT INDEX, GRANT MACEWAN

Controls		Certainty (- .32, p < .001) Rho (N)
Morality	Low	- .14*** (73)
	High	- .38 (58)
Severity	Low	- .14*** (86)
	High	- .50 (61)
Peer involvement	Low	- .33*** (93)
	High	- .02 (59)

[a]Control variables are dichotomized above and below their mean values.

***p < .001.

From Table 16 we see that the deterrent effect of certainty operates only when Grant MacEwan respondents are highly moral (rho = -.38, p < .001) or know few friends arrested for crimes (rho = -.33, p < .001). In addition, the certainty hypothesis is particularly strong when punishment is perceived to be both certain and severe, with the rho value increasing to -.50 (p < .001) from -.32 (p < .001).

Table 13 shows two extraneous factors are related to both certainty and crime involvement. Informal parental sanctioning has a rho of .24 (p < .01) with

certainty and - .21 ($p < .01$) with crime involvement. Informal peer sanctioning is correlated .26 ($p < .001$) with certainty and - .46 ($p < .001$) with crime involvement. Controlling for these variables in Table 17, we find the deterrence effect of certainty only applies when parental sanctioning is perceived likely. In this situation, the original relationship between perceived certainty and crime involvement increases from rho = - .32 ($p < .001$) to rho = .49 ($p < .001$). Although certainty and crime involvement are significantly associated for both categories of informal peer sanctioning, the relationship is significantly reduced when respondents feel loss of respect from friends unlikely (rho = -.18, $p < .05$) and increased (rho = -.45, $p < .001$) when they perceive it to be likely.

TABLE 17

SPEARMAN CORRELATIONS FOR PERCEIVED CERTAINTY OF PUNISHMENT INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING[a] FOR INFORMAL PARENTAL SANCTIONING INDEX AND INFORMAL PEER SANCTIONING INDEX, GRANT MACEWAN

Controls		Certainty (- .32, $p < .001$) Rho (N)
Parental Sanctions	Low	- .11 (83)
	High	- .49*** (66)
Peer Sanctions	Low	- .18* (83)
	High	- .45*** (67)

[a]Control variables dichotomized above and below their mean values.

*$p < .05$; ***$p < .001$.

Table 13 shows religiosity is associated with crime involvement (rho = - .17, $p < .05$) but not with perceived certainty. A slight decrease in the certainty-crime relationship occurs when religiosity responses are held constant (Table 18).

TABLE 18

SPEARMAN CORRELATIONS FOR PERCEIVED CERTAINTY OF PUNISHMENT INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING FOR RELIGIOSITY[a], GRANT MACEWAN SAMPLE

Religiosity	Certainty (- .32, $p < .001$) Rho (N)
Low	- .26** (102)
High	- .26* (41)

[a]Religiosity is dichotomized as follows: Attending church less than once per month is low; once per month or more is high.

*$p < .05$

**$p < .01$

In both partial tables, the correlation between certainty and crime involvement is reduced slightly for -.32 ($p < .001$) to -.26 ($p < .01$ and $p < .05$, respectively). It could be that a interaction effect is occurring when the certainty variable is held constant in the religiosity-crime relationship: This

possibility will be examined in the analysis of variance section.

In summary, it appears, for the Grant MacEwan sample, that perceived certainty of punishment is negatively associated with reported crime involvement when the students are morally committed to the legal code, have few criminal associates, fear severe punishment or perceive a likely loss of parental or peer respect.

Severity of Punishment and Crime Involvement: University Sample

Data presented in Table 10 do not support the deterrence hypothesis for the University sample. The rho value (.01) indicates no relationship between perceived severity of punishment and crime involvement. Despite morality being significantly related to severity (rho = -.19, $p < .05$) and crime involvement (-.49, $p < .001$), no suppressor or conditional relationships emerge when its effects are held constant. Similarly, no change is produced in the severity-crime relationship when perceived certainty--which has a .41 ($p < .001$) rho value with perceived severity--is the test factor.

Table 12 shows sex is significantly correlated with crime involvement (rho = -.32, $p < .001$) and severity (.27, $p < .01$) but controlling for this variable produces no deterrence support. In fact, contrary to our expectations, for males there is a significant positive rho value (.26, $p < .05$) between perceived severity and crime involvement. This means for University males that the greater the perceived threat of severe punishment, the more likely the commission of offenses. The results of the above third factor tests are presented

in Table 19.

TABLE 19

SPEARMAN CORRELATIONS FOR PERCEIVED SEVERITY OF PUNISHMENT INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING[a] FOR CERTAINTY OF PUNISHMENT INDEX, MORALITY INDEX AND SEX, UNIVERSITY

Controls		Severity (.01) Rho (N)
Certainty	Low	.12 (56)
	High	- .10 (41)
Morality	Low	- .09 (49)
	High	.00 (48)
Sex	Male	.26* (46)
	Female	- .11 (50)

[a]Certainty of punishment and morality are dichotomized above and below their mean values.

*$p < .05$.

Severity of Punishment and Crime Involvement: Grant MacEwan Sample

The Grant MacEwan sample displays the expected deterrence relationship between perceived severity and crime involvement in Table 11. The rho value of -.18 ($p < .05$) indicates that as the perceived threat of severity increases, amount of reported crime decreases. Table 11 also reveals significant

intercorrelations between severity and morality (rho = .22, $p < .01$), and severity and certainty (rho = .44, $p < .001$). Since morality and certainty are also associated with crime involvement--rhos of -.65 ($p < .001$) and -.32 ($p < .001$), respectively--there is a possibility that the deterrence finding could be spurious[2], (see page 42).

Perceived certainty of punishment does affect the original deterrence finding (see Table 20). Among respondents who perceive punishment to be certain, there is a significantly stronger deterrence relationship (an increase from rho = -.18, $p < .05$ to rho = -.33, $p < .01$). However, no severity-crime association occurs when certainty of punishment is perceived unlikely (rho = .07).

Holding the effects of morality constant in Table 20, we find the severity-crime relationship no longer significant in either of the morality conditions.

TABLE 20

SPEARMAN CORRELATIONS FOR PERCEIVED SEVERITY OF PUNISHMENT INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING[a] FOR MORALITY INDEX AND PERCEIVED CERTAINTY OF PUNISHMENT INDEX, GRANT MACEWAN

Controls		Severity (-.18, $p < .05$) Rho (N)
Morality	Low	- .04 (71)
	High	- .14 (56)
Certainty	Low	.07 (88)
	High	- .33** (59)

[a]Morality and certainty of punishment are dichotomized above and below their mean values.

**$p < .01$.

However, if we consider the argument that fear of severe consequences may help form or modify attitudes (Zimring and Hawkins, 1973:149-154; Aronson, 1972:65-69), there is a possibility that morality intervenes between severity and crime involvement thus depressing the relationship from rho = -.18 ($p < .05$) to a value of -.14 under high morality and -.04 under low morality. If this is the case, we would expect that the original morality and crime involvement relationship would remain when severity is held constant. As Table

21 demonstrates, the original association (rho = -.65, $p < .001$, see Table 11) between morality and crime involvement remains significant for the "partial" values. There is also an interaction effect occurring, such that the initial morality rho of -.65 ($p < .001$) is reduced to -.48 ($p < .001$) for those subjects who perceive punishment to be severe and increased to -.76 ($p < .001$) for those who do not.

TABLE 21

SPEARMAN CORRELATIONS FOR MORALITY INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING FOR PERCEIVED SEVERITY[a] OF PUNISHMENT INDEX, GRANT MACEWAN

Severity	Morality (-.65, $p < .001$) Rho (N)
Low	- .76*** (73)
High	- .48*** (54)

[a]Severity of punishment is dichotomized above and below the mean value.

***$p < .001$.

For the Grant MacEwan sample, perceived severity is also significantly associated with three extraneous variables (see Table 13)--informal sanctioning by parents (rho = .15, $p < .05$), informal sanctioning by peers (rho = .15,

$p < .05$) and religiosity (rho = .19, $p < .05$). These "control" variables are also related to crime involvement with rho values of -.21 ($p < .01$), -.46 ($p < .001$) and -.17 ($p < .05$), respectively. Table 22 presents the "partial" severity and crime involvement correlations for the dichotomized categories of these control variables[3] (see page 42).

It appears that severity and crime involvement are only related when informal sanctioning is perceived as inevitable. The original severity--crime relationship increases from rho = -.18 ($p < .05$) to -.26 ($p < .05$) when parents are likely to withdraw respect and to -.33 ($p < .01$) when friends so threaten.

TABLE 22

SPEARMAN CORRELATIONS FOR PERCEIVED SEVERITY OF PUNISHMENT INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING[a] FOR INFORMAL PARENTAL SANCTIONING INDEX, INFORMAL PEER SANCTIONING INDEX AND RELIGIOSITY, GRANT MACEWAN

Controls		Severity (- .18, $p < .05$) Rho (N)
Parental Sanctions	Low	.04 (82)
	High	- .26* (63)
Peer sanctions	Low	.04 (82)
	High	- .33** (66)
Religiosity	Low	- .12 (40)
	High	- .10 (99)

[a]Parental and peer sanctional are dichotomized above and below their mean values. Religiosity is dichotomized as follows: Attending church less than once a month is low; once per month or more is high.

*$p < .05$; **$p < .01$.

The data presented in Table 22 also indicate a possible spurious relationship between perceived severity and crime involvement due to the effects of religiosity. Among both categories of Grant MacEwan students--those who attend church regularly and those who do not--the initial severity-crime association of rho = -.18 ($p < .05$) is no longer evident. However, when the converse situation is considered in Table 23, we find that only students who perceive punishment not to be severe demonstrate a moderate significant association between religiosity and crime involvement: The original religiosity-crime rho increasing from -.17 ($p < .05$) to -.32 ($p < .01$). It may be, therefore, that the decrease in the severity-crime relationship in Table 22--although significant--is not entirely due to the spurious effect of religiosity by itself. This argument is particularly appealing since the religiosity-crime association does not maintain significance for both conditions of severity.

TABLE 23

SPEARMAN CORRELATIONS FOR RELIGIOSITY AND CRIME INVOLVEMENT INDEX CONTROLLING FOR SEVERITY[a] OF PUNISHMENT INDEX, GRANT MACEWAN

Severity	Religiosity (-.17 , $p < .05$) Rho (N)
Low	- .32** (80)
High	.03 (59)

[a]Severity of punishment is dichotomized above and below the mean value.

** $p < .01$.

We conclude from our analysis that perceived severity appears to be negatively associated with crime involvement when Grant MacEwan students perceive punishment to be certain or informal sanctioning likely. It still remains possible that these deterrence findings are, in part, spurious due to the effects of morality and religiosity. However, the decreases in rho values are not large despite their loss of statistical significance. We shall address this issue once again in a later analysis.

Moral Commitment and Crime Involvement: University Sample

It is hypothesized that the stronger the commitment to existing legal codes, the lower the incidence of crime. This contention has strong support in both samples as witnessed by the zero order rho values between morality and crime involvement in Tables 10 and 11.

The morality and crime involvement variables, in the University sample, are moderately correlated with a number of independent and extraneous factors (see Tables 10 and 12). In particular, peer involvement and informal peer sanctioning have the following relevant marginal relationships: .37 ($p < .001$) and .35 ($p < .001$) with morality, respectively; and -.77 ($p < .001$) and -.31 ($p < .001$) with reported criminality, respectively. Sex, income and religiosity have rhos of -.32 ($p < .001$), .17 ($p < .05$) and -.17 ($p < .05$) with crime involvement only; and severity and informal parental sanctioning have rhos of -.19 ($p < .05$) and .43 ($p < .001$) with morality only. These significant associations could indicate that the initial morality-crime association

of -.49 ($p < .001$) may be qualified by the presence of other factors (see page 42).

Table 24 shows that the relationship between morality and crime involvement remains significant when we hold constant the effects of the above test variables. However, the morality hypothesis appears particularly strong when parental sanctioning is perceived likely (the initial rho of -.49, $p < .001$ increases to -.61, $p < .001$); when peer sanctioning is perceived likely (rho increases to -.56, $p < .001$); and when the sample consists of males only (rho increases to -.58, $p < .001$).

Moral Commitment and Crime Involvement: Grant MacEwan Sample

The Grant MacEwan rho value of -.65 ($p < .001$) is also strongly supportive of the morality assumption, even more so than the University sample. Again we find certain independent and extraneous factors significantly related to both morality and crime involvement. Certainty of punishment has a .29 ($p < .001$) correlation with morality and -.32 ($p < .001$) rho with crime involvement; severity has a .22 ($p < .01$) correlation with morality and -.18 ($p < .05$) rho with crime involvement; peer involvement has a .57 ($p < .001$) correlation with morality and -.79 ($p < .001$) with crime involvement; informal parental sanctioning has a .36 ($p < .001$) correlation with morality and a -.21 ($p < .01$) rho with crime involvement; informal peer sanctioning has a .37 ($p < .001$) correlation with morality and a -.46 ($p < .001$) rho with crime involvement; and religiosity has a .15 ($p < .05$) correlation with morality

TABLE 24

SPEARMAN CORRELATIONS FOR MORALITY INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING[a] FOR PERCEIVED SEVERITY OF PUNISHMENT INDEX, PEER INVOLVEMENT INDEX, SEX, INFORMAL PARENTAL SANCTIONING INDEX, INFORMAL PEER SANCTIONING INDEX, INCOME AND RELIGIOSITY, UNIVERSITY

Controls		Morality (- .49, p < .001) Rho (N)
Severity	Low	- .53*** (48)
	High	- .41** (49)
Peer involvement	Low	- .41*** (54)
	High	- .47*** (45)
Sex	Male	- .58*** (47)
	Female	- .39** (51)
Parental sanctioning	Low	- .41** (55)
	High	- .61*** (44)
Peer sanctioning	Low	- .42*** (56)
	High	- .56*** (43)
Income	Low	- .41** (32)
	High	- .48*** (46)
Religiosity	Low	- .47*** (75)
	High	- .47* (22)

[a]Severity of punishment, peer involvement, parental and peer sanctioning are dichotomized above and below their mean values. Income is low below $20,000 and high above $20,000[4]. Religiosity is low if church attendance is less than once per month and high if once per month or more.

*p < .05

**p < .01

***p < .001.

and a .17 ($p < .05$) rho with crime involvement.

Although the morality-crime relationship remains strongly significant when these (above) variables are controlled in Table 25, certain slight interaction effects occur.

Under conditions of high perceived severity, the morality hypothesis reduces from rho = -.65 ($p < .001$) to -.48 ($p < .001$) compared to an increase to -.76 ($p < .001$) under low severity conditions. Earlier in this paper, we suggested that this difference may result from a possible intervening or interaction effect occurring between severity, morality and crime involvement. We expect to specify the exact nature of this three-variable relationship after the analysis of variance is performed in the next section.

When the effects of peer involvement are held constant, we find a weaker relationship between morality and crime involvement, particularly when Grant MacEwan students know many friends arrested (the initial rho value of -.65, $p < .001$ decreases to -.42, $p < .001$).

Finally, when Grant MacEwan respondents attend church regularly or fear the loss of peer respect, the correlation of -.65 ($p < .001$) between morality and crime involvement reduces to -.53 ($p < .001$) and -.57 ($p < .001$), respectively.

TABLE 25

SPEARMAN CORRELATIONS FOR MORALITY INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING[a] FOR CERTAINTY OF PUNISHMENT INDEX, SEVERITY OF PUNISHMENT INDEX, PEER INVOLVEMENT INDEX, INFORMAL PARENTAL SANCTIONING INDEX, INFORMAL PEER SANCTIONING INDEX AND RELIGIOSITY, GRANT MACEWAN

Controls		Morality (-.65, p < .001) Rho (N)
Certainty	Low	- .63*** (78)
	High	- .65*** (58)
Severity	Low	- .76*** (73)
	High	- .48*** (54)
Peer involvement	Low	- .60*** (81)
	High	- .42*** (51)
Parental sanctions	Low	- .69*** (71)
	High	- .60*** (58)
Peer sanctions	Low	- .60*** (71)
	High	- .57*** (59)
Religiosity	Low	- .62*** (86)
	High	- .53*** (38)

[a]All controls except religiosity are dichotomized above and below their mean values. Religiosity is low if church attendance is less than once per month, and high if it is once a month or more.

*** p < .001.

Peer Associations and Crime Involvement: University Sample

The prediction of hypothesis five that "the greater the association with criminal others, the greater the crime involvement" is supported in both samples. The strong negative association of -.77 ($p < .001$) indicates that as University respondents commit more offenses--scoring higher on the reported crime scale--they know more "arrested/convicted" friends.

Holding constant the effects of all variables significantly related to peer involvement and/or crime involvement (see Tables 10 and 12)--morality, sex, informal parental and peer sanctioning, income and religiosity--we find slight conditional effects due to sex and morality only[5]. The partial results for the University sample are illustrated in Table 26.

Males appear to be highly influenced by criminal friends (the initial rho of -.77, $p < .001$ increases to -.84, $p < .001$), and females less influenced (rho decreases to -.60, $p < .001$). When morality is considered, there is a slight weakening of the peer-crime relationship from -.77 ($p < .001$) to -.68 ($p < .001$) for subjects who are highly moral. However, under all conditions of all variables the differential-association hypothesis remains highly significant.

TABLE 26

SPEARMAN CORRELATIONS FOR PEER INVOLVEMENT INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING[a] FOR THE MORALITY INDEX, SEX, INFORMAL PARENTAL SANCTIONING INDEX, INFORMAL PEER SANCTIONING INDEX, INCOME AND RELIGIOSITY, UNIVERSITY

Controls		Peer Involvement (-.77, $p < .001$) Rho (N)
Morality	Low	- .76*** (49)
	High	- .68*** (50)
Sex	Male	- .84*** (47)
	Female	- .60*** (51)
Parental Sanctions	Low	- .77*** (55)
	High	- .76*** (44)
Peer Sanctions	Low	- .78*** (56)
	High	- .71*** (43)
Income	Low	- .77*** (36)
	High	- .76*** (52)
Religiosity	Low	- .78*** (75)
	High	- .77*** (22)

[a]Morality, parental and peer sanctioning are dichotomized above and below their mean values. Income is low below $20,000 and high above $20,000 (see footnote 4). Religiosity is low if church attendance is less than once per month and high if once per month or more.

*** $p < .001$.

Peer Associations and Crime Involvement: Grant MacEwan Sample

Virtually the same results are obtained for the Grant MacEwan sample. Again the rho value of -.79 ($p < .001$) supports a differential-association interpretation.

Table 27 illustrates the peer involvement and crime involvement correlations controlling for the independent variables--morality and certainty--significantly associated with both factors. The initial rho value of -.79 ($p < .001$) "weakens" to -.67 ($p < .001$) when respondents are highly moral, but both correlations still remain strong and significant.

TABLE 27

SPEARMAN CORRELATIONS FOR PEER INVOLVEMENT INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING[a] FOR CERTAINTY OF PUNISHMENT INDEX AND MORALITY INDEX, GRANT MACEWAN

Controls		Peer Involvement (-.79, $p < .001$) Rho (N)
Morality	Low	-.78*** (73)
	High	-.67*** (59)
Certainty	Low	-.76*** (91)
	High	-.80*** (61)

[a]Controls are dichotomized above and below their mean values.

***$p < .001$.

Similarly, when the extraneous factors related to peer involvement and/or crime involvement (see Table 13)--informal parental and peer sanctioning, and religiosity--are considered in Table 28, only sanctioning by peers slightly affects the initial peer-crime finding: If sanctioning by peers is perceived likely, the rho value of -.79 ($p < .001$) reduces to -.66 ($p < .001$).

TABLE 28

SPEARMAN CORRELATIONS FOR PEER INVOLVEMENT INDEX AND CRIME INVOLVEMENT INDEX CONTROLLING[a] FOR INFORMAL PARENTAL SANCTIONING INDEX, INFORMAL PEER SANCTIONING INDEX AND RELIGIOSITY, GRANT MACEWAN

Controls		Peer Involvement (-.79, $p < .001$) Rho (N)
Parental sanctions	Low	- .77*** (83)
	High	- .77*** (67)
Peer sanctions	Low	- .79*** (83)
	High	- .66*** (68)
Religiosity	Low	- .78*** (86)
	High	- .79*** (38)

[a] Informal parental and peer sanctioning are dichotomized on their mean values. Religiosity is low if church attendance is less than once per month and high if once per month or more.

*** $p < .001$.

A Further Consideration of the Deterrence, Morality and Peer Involvement Hypotheses

The initial tests of hypotheses one to five suggest that the relationships between the dependent variable--crime involvement--and the independent variables--moral commitment index, peer involvement index and threat of punishment indices (perceived certainty and severity)--are qualified by the presence of other factors. We now propose a more rigorous examination of these results.

Analysis of variance affords us the opportunity to calculate the amount of variation in crime scores "explained" by each variable as well as testing for the presence of interaction effects[6]. Ideally a test of this nature is most meaningful when all variables--independent and extraneous--can be processed simultaneously in a full factorial design. However, currently available analysis of variance computer programs are limited to a maximum of five "factors" to be tested at one time. As a result, we are forced to reduce the number of "relevant" variables to a manageable size. One method of doing so is to input only those factors which initially demonstrate a sufficiently strong zero order correlation--either alone or in partial analyses--with crime involvement. The criterion employed in choosing the variables for the analysis of variance is a probability value of .01 or lower.

In the University sample this eliminates three variables--income, religiosity and informal parental sanctioning. Income has a .17 ($p < .05$) rho correlation with crime involvement, -.19 ($p < .05$) rho with peer involvement and does not significantly affect any partial relationships. Religiosity has a -.17

($p < .05$) rho association with crime involvement but no initial association with any independent variable. Finally, informal parental sanctioning has no significant correlation with crime involvement, and does not significantly alter the partial relationships in which its effects are held constant. Thus, for the University students, we have six categorical factors remaining--perceived certainty, perceived severity, morality, peer involvement, informal peer sanctioning and sex. The inclusion of the "deterrence" variables are due solely to their significant negative relationship with crime involvement under the condition of certainty and high severity (where rho increases from -.09 to -.28, $p < .01$; see Table 14).

Similarly, in the Grant MacEwan sample, we have seven variables which must be included in the analysis--perceived certainty of punishment, perceived severity of punishment, morality, peer involvement, informal parental sanctioning, informal peer sanctioning and religiosity. Religiosity is included, despite the initial .05 level of significance for its relationship with crime involvement, as it appears to have conditional or possible spurious effects on other independent and crime involvement relationships. To wit, it reduces the certainty-crime rho from -.32 ($p < .001$) to -.26 ($p < .05$ and $p < .01$) and the severity-crime rho from -.18 ($p < .05$) to -.10 and -.12 (see Tables 18 and 22).

Thus, we are still faced with the problem of too many "factors" for a complete analysis. One possible solution is to present a series of analyses of variance, where the important variables--those having the strongest association

with crime involvement--remain "factors" throughout. The lesser variables--those having weaker associations with crime involvement--assume the role of "factor" in one analysis and "covariate" in another. When a variable is inserted as a "covariate," the original metric measurement level is maintained. When the same variable is used as a "factor" it is dichotomized above and below its mean value. In this way, it is hoped some consistent trend of independent and interaction effects will emerge allowing for a meaningful interpretation of joint effects.

To supplement the analysis of variance, an accompanying breakdown of mean crime involvement scores will be presented for those variables involved in higher order interaction(s). The results obtained for each sample will be discussed separately and the final conclusions compared.

The University Sample

Four analyses of variance are performed on this sample:

1. processing the independent variables only, i.e., certainty of punishment, severity of punishment, morality and peer involvement;

2. processing severity of punishment, morality, peer involvement, informal peer sanctioning and sex[7] as "factors," and certainty of punishment as a "covariate;"

3. processing certainty of punishment, morality, peer involvement, informal peer sanctioning and sex as "factors," and severity of punishment as a "covariate;"

4. processing certainty of punishment, severity of punishment, morality, peer involvement and sex as "factors," and informal peer sanctioning as a "covariate."

Table 29 comprises a summary of the significant results obtained from the above analyses of variance, (see also Appendix E for the complete results).

The data suggest peer involvement (i.e., knowledge of criminal friends) clearly explains a moderate amount of the variance, with sex accounting for a relatively smaller proportion. To illustrate this comparison, Table 29 shows that the correlation ratio for peer involvement varies from .05 to .17 (depending on the specific analysis), while the eta-square for sex varies only from .02 to .04.

Due to the consistent interactions between peer involvement and sex, and peer involvement, morality and severity of punishment, it is apparent that a small portion of the variation in crime scores is the result of conditional effects. Table 30 presents an initial breakdown of mean crime scores for the variables "explaining" crime involvement.

TABLE 29

A SUMMARY OF THE MAIN EFFECTS AND INTERACTION EFFECTS FOR ANALYSES OF VARIANCE PERFORMED ON THE PERCEIVED CERTAINTY OF PUNISHMENT INDEX, THE PERCEIVED SEVERITY OF PUNISHMENT INDEX, THE MORALITY INDEX, THE PEER INVOLVEMENT INDEX, THE INFORMAL PEER SANCTIONING INDEX AND SEX VARIABLE WITH THE CRIME INVOLVEMENT INDEX AS THE CRITERION VARIABLE, UNIVERSITY SAMPLE (Unequal n's)

	Factors: Certainty, Severity, Morality, Peer Involvement; Covariates: #1				Factors: Severity, Morality, Peer Involvement, Peer Sanctions, Sex; Covariates: Certainty #2				Factors: Certainty, Morality, Peer Involvement, Peer Sanctions, Sex; Covariates: Severity #3				Factors: Certainty, Severity, Morality, Peer Involvement, Sex; Covariates: Peer Sanctions #4			
Main Effects	Variable	Mean Sum of Squares	F	Eta^2	Variable	Mean Sum of Squares	F	Eta^2	Variable	Mean Sum of Squares	F	Eta^2	Variable	Mean Sum of Squares	F	Eta^2
	Peer Involvement	123.8	10.76***	.07	Peer Involvement	124.2	12.98***	.07	Peer Involve.	301.4	32.58***	.17	Peer Involvement	76.8	8.85**	.04
	Morality	79.3	6.89*	.04	Sex	37.5	3.91*	.02	Sex	68.7	7.43**	.04	Sex	38.6	4.44*	.02
									Certainty	43.4	4.69*	.02				
Two-way Interactions	Morality x Severity	44.2	3.84*	.02	Peer Involvement x Sex	49.9	5.21*	.03	Peer Involvement x Sex	40.4	4.37*	.02	Peer Involvement x Sex	59.9	6.90**	.03
													Peer Involvement x Severity	32.6	3.75*	.02
Three-way Interactions					Peer Involvement x Morality x Severity	36.9	3.86*	.02					Peer Involvement x Morality x Severity	41.9	4.83*	.02
Explained	834.1				1081.3				1103.5				1143.0			
Residual	943.5				660.7				638.5				599.0			
Total	1777.6				1742.0				1742.0				1742.0			

All "factors" are dichotomized above and below the mean value. "Covariate's" measurement level is unaltered. All factors have 1 d.f.
Only "effects" with .05 or higher levels of significance are included in this table.

*** $p < .001$; ** $p < .01$ * $p < .05$

TABLE 30

MEAN CRIME INVOLVEMENT INDEX SCORES FOR PEER INVOLVEMENT INDEX, SEX AND MORALITY INDEX, UNIVERSITY[a]

Variable	Category	Mean Crime Score	(N)
Peer involvement	Low	13.75	(54)
	High	18.60	(45)
Sex	Male	18.68	(47)
	Female	15.39	(51)
Morality	High	15.95	(49)
	Low	19.00	(50)
Certainty	Low	17.44	(57)
	High	16.47	(42)

[a]Variables dichotomized above and below mean values.

Although moral commitment to existing legal codes and certainty of punishment do have slight independent effects, their importance is limited to a particular analysis--with the omission of specific relevant variable(s)--and no uniform independent trend emerges. Certainty appears to have a significant main effect only when severity is a covariate[8]. In the case of morality, it is an important explanatory variable when sex and informal peer sanctioning are excluded from the analysis. If all variables are included, morality appears to explain variation in crime scores only in conjunction with severity of punishment and peer involvement.

Table 31 indicates that the peer involvement hypothesis applies to both male and female respondents; however, the hypothesis is considerably stronger for males. Both males and females who associate with criminal friends have higher crime involvement scores than those who do not. Among respondents who know many criminals, males commit more offenses than do females; but among those who know few criminal friends, no sex differences exist. It appears, therefore, that the peer-crime relationship is, in small part, conditioned by the sex of the respondent.

TABLE 31

MEAN SCORE ON CRIMINAL INVOLVEMENT INDEX BY PEER INVOLVEMENT INDEX[a] AND SEX, UNIVERSITY (N = 98)

Peer Involvement	Males	Females
High	20.19 (30)	16.53 (24)
Low	13.73 (17)	13.76 (27)

[a]Peer Involvement is dichotomized above and below mean value.

Table 32 reveals that the deterrence hypothesis (using severity of punishment as an indicator) only applies when respondents have few criminal friends and low morality. For all other "conditions," mean crime scores increase

(very slightly) as severity increases. The data also show that the morality hypothesis obtains its greatest support when peer involvement is high. In fact, when respondents know few criminal friends (low peer involvement) and perceive severity to be high, mean crime scores increase as morality scores increase. The differential-association hypothesis (peer-crime relationship) applies in all categories, however, it is especially potent when morality is low and severity of punishment is high. The low frequency (seven cases) occurring when peer involvement is high, morality low and severity low does indicate that caution should be observed in interpreting these results.

TABLE 32

MEAN SCORE ON CRIMINAL INVOLVEMENT INDEX BY PEER INVOLVEMENT INDEX, MORALITY INDEX AND SEVERITY OF PUNISHMENT INDEX[a], UNIVERSITY (N = 97)

	High Peer Involvement		Low Peer Involvement	
Severity	Low Morality	High Morality	Low Morality	High Morality
Low	20.22 (7)	16.91 (3)	15.67 (13)	13.54 (15)
High	21.12 (15)	17.53 (9)	12.83 (14)	14.11 (11)

[a]Each independent variable is dichotomized above and below their mean value.

Summary

We conclude that the influence of others personally known to be involved in criminal activity appears to be the most important determinant in explaining crime involvement in the University sample. Sex and moral commitment to existing legal codes also play a role, particularly when the students are male or know many criminal friends. Severe punishment threats seem to have a minor importance in preventing crime when both moral commitment and peer involvement are low.

The Grant MacEwan Sample

Five analyses of variance are performed on this sample[9]:

1. processing the independent variables only, i.e., certainty of punishment, severity of punishment, morality and peer involvement;

2. processing certainty of punishment, severity of punishment, morality, peer involvement and religiosity[10] as "factors," and informal parental sanctioning and informal peer sanctioning as "covariates;"

3. processing certainty of punishment, severity of punishment, morality, peer involvement and informal parental sanctioning as "factors," and informal peer sanctioning and religiosity as "covariates;"

4. processing certainty of punishment, severity of punishment, morality, peer involvement and informal peer sanctioning as "factors," and informal parental sanctioning and religiosity as "covariates;"

5. processing morality, peer involvement, informal parental

sanctioning, informal peer sanctioning and religiosity as "factors," and certainty of punishment and severity of punishment as "covariates."

Table 33 presents a summary of the significant results obtained from the above analyses of variance (see also Appendix F for the complete results).

The basic trend of the analyses suggests peer involvement accounts for the largest proportion of the variation in crime involvement scores--with eta-square varying from .02 to .11 (see Table 33). A lesser portion of variation is explained by morality which shows a correlation ratio of .02 to .06 depending on the specific analysis in Table 33. Table 34 presents the individual breakdown of mean crime scores for peer involvement, morality and informal sanctioning by peers.

TABLE 34

MEAN CRIME INVOLVEMENT INDEX SCORES FOR PEER INVOLVEMENT INDEX, MORALITY INDEX AND INFORMAL PEER SANCTIONING INDEX[a], GRANT MACEWAN

Variable	Category	Mean Crime Score	(N)
Peer involvement	Low	13.58	(72)
	High	20.31	(81)
Morality	Low	18.97	(94)
	High	14.24	(59)
Peer sanctions	Low	19.05	(83)
	High	14.78	(68)

[a]Variables dichotomized above and below mean values.

TABLE 33

A SUMMARY OF THE MAIN EFFECTS AND INTERACTION EFFECTS FOR ANALYSES OF VARIANCE PERFORMED ON THE PERCEIVED CERTAINTY OF PUNISHMENT INDEX, THE PERCEIVED SEVERITY OF PUNISHMENT INDEX THE MORALITY INDEX, THE PEER INVOLVEMENT INDEX, THE INFORMAL PARENTAL SANCTIONING INDEX, THE INFORMAL PEER SANCTIONING INDEX AND THE RELIGIOSITY VARIABLE WITH THE CRIME INVOLVEMENT INDEX AS THE CRITERION VARIABLE
GRANT MACEWAN SAMPLE (Unequal n's)

Factors	Factors: Certainty, Severity, Morality, Peer Involvement Covariates: #1			Factors: Certainty, Severity, Morality, Peer Involvement, Religiosity Covariates: Peer Sanctions, Parental Sanctions #2			Factors: Certainty, Severity, Morality, Peer Involvement, Parental Sanctions Covariates: Peer Sanctions, Religiosity #3			Factors: Certainty, Severity, Morality, Peer Involvement, Peer Sanctions Covariates: Parental Sanctions, Religiosity #4			Factors: Morality, Peer Involvement, Parental Sanctions, Peer Sanctions, Religiosity Covariates: Certainty, Severity #5		
	Variable	Mean Sum of Squares	F Eta^2	Variable	Mean Sum of Squares	F Eta^2	Variable	Mean Sum of Squares	F Eta^2	Variable	Mean Sum of Squares	F Eta^2	Variable	Mean Sum of Squares	F Eta^2
Main Effects	Peer Involvement	446.6	27.54*** .11	Peer Involv.	85.7	6.67**	Peer Inv.	164.3	11.16***.04	Peer Inv.	185.1	11.19***.05	Peer Inv.	303.9	18.94***.08
													Morality	76.0	4.74* .02
Covariate Effects				Peer Sanct.	219.8	17.12***.06	Peer sanctions	205.4	13.95***.06						
				Par. Sanct.	87.4	6.81** .02									
Two-way Interactions				Morality x Severity	53.7	4.18*.01	Peer Involv. x Certainty	58.7	3.99* .01						
							Peer Involve. x Severity	94.7	6.43** .03						
				Morality x Religiosity	53.2	4.14*.01	Peer Involve. x Parental Sanctions	58.9	4.00* .01						
							Certainty x Parental Sanctions	80.4	5.46* .02						
Three-way Interactions				Morality x Peer Involvement x Religiosity	93.5	7.28*.03	Morality x Certainty x Severity	63.6	4.32* .02						
				Morality x Certainty x Religiosity	105.3	8.20*.03									
				Morality x Severity x Religiosity	54.3	4.23*.01									
				Certainty x Severity x Relgiosity	264.7	20.62*** .07									
Explained	1938.1			2409.1			2207.6			2011.4			2145.5		
Residual	2124.5			1373.4			1574.9			1771.1			1637.1		
Total	4062.7			3782.5			3782.5			3782.5			3782.5		

All "Factors" are dichotomized above and below mean value, except religiosity which is: attending church less than once per month is low and once per month or more is high. "Covariates" measurement level is unaltered. All "Factors" have 1 d.f. Only "effects" with .05 or higher levels of significance are included in this table. ***p < .001; **p < .01; *p < .05

Although informal peer sanctioning only explains a significant proportion of variation in crime scores when it is a "covariate," the absence of significant interaction effects involving this variable leads us to suspect some unusual relationship is occurring between this variable and some other "factor." A careful examination of Table 33 reveals that morality emerges as a significant explanatory variable in all analyses which exclude informal peer sanctioning as a "factor." In those analyses which include both morality and informal peer sanctioning as "factors," morality's importance decreases significantly. Normally, one logical explanation would be that the two variables "interact" to account for variation in crime scores. The present data, however, do not support such a contention. In an attempt to identify the problem, a breakdown of mean crime scores for the original categories of morality and informal peer sanctioning is calculated and the results are presented in Table 35.

It appears from Table 35 that the "never wrong" column produces the antithesis of that which is proposed in the morality hypothesis. The data in this column, however, do consistently support the expected informal peer sanctioning and crime involvement relationship. Ignoring the "never wrong" column, the morality hypothesis is supported for all conditions of informal peer sanctioning[11]. The elimination of the 21 cases in the "never wrong" column does improve the simultaneous contributions of morality and informal peer sanctioning somewhat (see Appendix G). Despite that, omitting these 21 respondents reduces the explanatory power of other variables, in particular, peer involvement and the threat of punishment variables. Due to this loss of information, we will not

TABLE 35

MEAN SCORE ON CRIMINAL INVOLVEMENT INDEX BY MORALITY INDEX AND INFORMAL PEER SANCTIONING INDEX, GRANT MACEWAN

	Morality			
Peer Sanctions	Never Wrong	Sometimes Wrong	Usually Wrong	Always Wrong
Very unlikely to lose respect	18.00 (1)		23.50 (10)	14.43 (7)
Unlikely to lose respect	17.91 (11)	27.00 (1)	20.11 (38)	15.89 (19)
Likely to lose respect	14.88 (8)		17.17 (24)	13.61 (23)
Very likely to lose respect	11.00 (1)			12.40 (10)

consider Table 35 and Appendix G any further. However, the implications of the above discussion may serve to partially explain why infomal peer sanctioning does not emerge as a independent explanatory "factor."

A further inspection of Table 33 shows a significant amount of variation in crime scores is also accounted for by a number of interaction effects.

The combination of certainty-severity-religiosity explains the greatest proportion of variation in crime scores of all the interaction effects presented in

Table 33. The correlation ratio for this interaction is .07. Table 36 suggests certainty is negatively related to crime involvement under all conditions of severity and religiosity except low severity and frequent church attendance. The small number of respondents (N = 4) in the category high certainty, low severity and frequent church attendance should be noted, however. The certainty of punishment hypothesis is particularly supported when severity of punishment and church attendance are high. Severity of punishment shows lower mean crime scores only under conditions of high certainty and frequent church attendance. Only a very slight negative relationship emerges in all other cases; in fact, when certainty is low and religiosity is high, severe punishment shows an increase in crime commission.

TABLE 36

MEAN SCORE ON CRIME INVOLVEMENT INDEX BY CERTAINTY OF PUNISHMENT INDEX, SEVERITY OF PUNISHMENT INDEX AND RELIGIOSITY[a], GRANT MACEWAN (N = 138)

	Low Certainty		High Certainty	
Religiosity	Low Severity	High Severity	Low Severity	High Severity
Low	18.79 (53)	18.28 (18)	15.75 (8)	14.84 (19)
High	15.07 (15)	19.89 (9)	19.75 (4)	13.67 (12)

[a]Certainty and severity of punishment are dichotomized above and below mean values. Religiosity is dichotomized as follows: low church attendance is less than once per month, high church attendance is once a month or more.

A smaller amount of variation in crime scores than that explained by certainty-severity-religiosity is accounted for by four interaction effects: morality-certainty-religiosity, peer involvement-severity, and certainty-parental sanctioning. Table 33 shows the correlation ratios for these interactions are .03, .03, .03 and .02, respectively. Table 37 (A, B, C, D) presents the mean crime scores for these conditional relationships.

Table 37A shows that the certainty of punishment hypothesis is most applicable when church attendance is rare. However, when respondents are frequent church attenders and low in morality, crime scores increase as certainty scores increase. But the small number of respondents (N = 5) in the category high certainty, low morality and high religiosity should be noted. Similarly, certainty of punishment "deters" crime more successfully when parental sanctioning is likely (see Table 37D). Severity of punishment has a weak negative relationship with crime involvement only when respondents know few criminals (see Table 37C). Although morality is negatively related to crime involvement in all categories of Table 37A, the hypothesis is particularly strong when church attendance is high and when certainty of punishment is high. But again, the small number of respondents (N = 5) in the category high certainty, low morality and high religiosity should be pointed out. Strong support for the morality hypothesis is also found, in Table 37B, when respondents know many criminal friends and attend church often. There are only two conditions under which morality makes very little impact on crime scores: low peer involvement and regular church attendance or high peer involvement and rare church

attendance. It should be noted, however, that under the conditions of high morality, high criminal involvement and high religiosity the cell size is a mere four cases which makes the interpretation of Table 37B inconclusive. The differential-association hypothesis is applicable in all interaction conditions. The expected increase in mean crime scores as peer involvement scores increase is particularly strong when severity is high (see Table 37C), morality low and religiosity high or morality high and religiosity low (see Table 37B).

Finally, a very small amount of variation in crime scores is explained by morality-certainty-severity, peer involvement-informal parental sanctioning, peer involvement-certainty, and morality-severity-religiosity interactions. Table 33 shows these interactions to have correlation ratios of .02, .01, .01 and .01, respectively. Table 38 (A, B, C, D) portrays the conditional effects resulting from these two-way and three-way interactions.

It seems from Table 38A that moderate support for the certainty hypothesis occurs when morality is high and severity of punishment is perceived to be high. Under all other conditions--except low morality and low severity, which show no difference in mean crime scores--there is only a slight decrease in mean crime scores as certainty scores increase. We also find a weak certainty-crime relationship when respondents know few criminal friends (see Table 38C). In Table 38A severity of punishment shows a small difference in crime scores when certainty is high and morality low. An "anti-deterrent effect" between severity and crime involvement occurs when morality is high and certainty of punishment is low (see Table 38A). Similarly, the severity of punishment hypothesis is

TABLE 37

MEAN SCORES ON CRIME INVOLVEMENT INDEX, GRANT MACEWAN,
(A) BY MORALITY INDEX, CERTAINTY OF PUNISHMENT INDEX
AND RELIGIOSITY[a] (N = 143)

	Low Morality		High Morality	
Religiosity	Low Certainty	High Certainty	Low Certainty	High Certainty
Low	19.50 (54)	16.56 (16)	16.30 (20)	12.83 (12)
High	18.93 (14)	20.00 (5)	13.91 (11)	13.00 (11)

(B) BY MORALITY INDEX, PEER INVOLVEMENT INDEX AND
RELIGIOSITY (N = 144)

	Low Morality		High Morality	
Religiosity	High Criminal Involvement	Low Criminal Involvement	High Criminal Involvement	Low Criminal Involvement
Low	20.24 (50)	15.30 (20)	19.17 (12)	12.43 (21)
High	22.42 (12)	13.71 (7)	16.25 (4)	12.83 (18)

(C) BY PEER INVOLVEMENT INDEX AND SEVERITY OF
PUNISHMENT INDEX (N = 148)

	High Criminal Involvement	Low Criminal Involvement
Severity		
Low	20.41 (51)	14.20 (35)
High	20.07 (29)	12.88 (33)

TABLE 37-continued

(D) BY CERTAINTY OF PUNISHMENT INDEX AND INFORMAL PARENTAL SANCTIONING INDEX (N = 149)

Parental Sanctions	Low Certainty	High Certainty
Low	18.58 (66)	16.94 (17)
High	17.72 (36)	13.83 (30)

[a]All variables except religiosity are dichotomized above and below mean values. Religiosity is dichotomized as follows: low church attendance is less than once per month, high church attendance is once a month or more.

TABLE 38

MEAN SCORES ON CRIME INVOLVEMENT INDEX, GRANT MACEWAN, (A) BY MORALITY INDEX, CERTAINTY OF PUNISHMENT INDEX, SEVERITY OF PUNISHMENT INDEX[a] (N = 147)

	Low Morality		High Morality	
Severity	Low Certainty	High Certainty	Low Certainty	High Certainty
Low	19.79 (48)	19.37 (8)	14.76 (25)	12.80 (5)
High	18.86 (22)	16.00 (14)	18.00 (6)	13.11 (19)

(B) BY PEER INVOLVEMENT INDEX AND INFORMAL PARENTAL SANCTIONING INDEX (N = 150)

	High Criminal Involvement	Low Criminal Involvement
Parental Sanctions		
Low	20.77 (52)	14.00 (31)
High	19.67 (27)	13.33 (40)

(C) BY PEER INVOLVEMENT INDEX AND CERTAINTY OF PUNISHMENT INDEX (N = 152)

	High Criminal Involvement	Low Criminal Involvement
Certainty		
Low	20.59 (64)	14.41 (41)
High	19.23 (17)	12.53 (30)

TABLE 38-continued

(D) BY MORALITY INDEX, SEVERITY OF PUNISHMENT INDEX AND RELIGIOSITY (N = 139)

	Low Morality		High Morality	
Religiosity	Low Severity	High Severity	Low Severity	High Severity
Low	19.59 (44)	17.37 (24)	15.27 (17)	14.64 (14)
High	20.43 (7)	18.50 (12)	13.50 (12)	13.44 (9)

[a]All variables except religiosity are dichotomized above and below mean values. Religiosity is dichotomized as follows: low church attendance is less than once per month, high church attendance is once a month or more.

weakly supported when morality is low in Table 38D. The small frequency of seven cases in the low morality, low severity and high religiosity category should be noted, however. Table 38A confirms the applicability of the morality proposition in all categories except when certainty is low and severity is high. In this instance, there is no difference in mean crime scores. The morality–crime relationship is particularly strong when certainty is high and severity low or both certainty and severity are low. Again a small number of respondents (N = 5) in the category high morality, high certainty and low severity is evident. Although morality shows the expected crime relationship in all categories of religiosity and severity (in Table 38D), the hypothesis is particularly supported if severity of punishment is low and religiosity high. The differential-association hypothesis applies strongly in all certainty or parental sanctioning conditions (see Table 38C and B). In fact, it appears that no relationship occurs between parental sanctioning and crime involvement when peer involvement is held constant in Table 38B.

Summary

Our Grant MacEwan results suggest peer involvement with criminals, fear of losing peer respect (informal peer sanctioning) and moral commitment to existing legal codes exert independent influences on crime involvement.

In addition to peer involvement's independent relationship, it is also related to reported criminality when severity of punishment is high, when morality is low and religiosity is high, or when morality is high and religiosity is low.

It appears that morality's relationship to crime involvement is, in part, dependent on the degree of peer involvement, certainty, severity and religiosity. That is, the morality-crime relationship weakens when association with criminal friends is low and church attendance is high, criminal involvement is high and church attendance is low, or perceived certainty of punishment is low and severity of punishment is high. In addition, morality has a number of conditional associations which do "explain" the variation in crime scores: when respondents perceive certain punishment and attend church frequently; when respondents have many criminal friends and attend church regularly; when respondents perceive certainty to be high or low but severity to be low; or when respondents perceive severity to be low and attend church regularly.

Threat of punishment, on the other hand, only deters crime when it interacts with other variables. In particular, certain punishment has a negative relationship with crime involvement when severity of punishment and church attendance are both high, when parental sanctioning is likely, and when both morality and severity of punishment are high. There is also a slight deterrent effect when peer involvement is low. However, two occasions arise when high certainty is associated with high crime involvement (the opposite of what we propose): when there is low severity of punishment and frequent church attendance or when there is low morality and frequent church attendance. Similarly, the severity-crime relationship only applies when there is high perceived certainty and high church attendance, when respondents know few criminals, when morality is low or when certainty of punishment is high and morality low. Again,

as with certainty, an "anti-deterrent" relationship emerges when certainty of punishment is low and religiosity is high or when morality is high and certainty low.

Returning to our earlier specualtion that severity of punishment intervenes in the morality and crime involvement relationship, we conclude that there appears to be little evidence, in the present analysis, to support such a conclusion. To argue in favor of intervention would require that severity of punishment account (independently) for some portion of the variation in crime scores. This does not occur. Instead, we speculate that the decrease in the severity-crime rho, from -.18 ($p < .05$) to -.04 and -.14 when morality is controlled, occurs because of the following conditional effects: when morality is low (and/or certainty high), severity demonstrates the deterrence hypothesis but when morality is high (and certainty low) an equally strong positive relationship between severity and crime involvement emerges.

The reduction in the original certainty-crime relationship and severity-crime relationship controlling for religiosity, appears to be due to a similar effect. To wit, when church attendance is low or when church attendance is high and severity is high, a deterrent relationship for certainty of punishment emerges, but when church attendance is high and severity or morality low, an anti-deterrence relationship for certainty occurs. Similarly, when church attendance is high and certainty is high, there is a negative severity-crime association, but when religiosity is high and certainty is low, there is a positive severity-crime relationship.

A Comparison of the Samples

1. Both samples show a consistent positive relationship between peer involvement and crime involvement.

2. Both samples show a negative relationship between morality and crime involvement except when peer associations are low (for Grant MacEwan this occurs only if religiosity is high) and severity of punishment is high (for Grant MacEwan this is true only when certainty is low also).

3. Both samples show a negative relationship between threat of severe punishment and crime involvement when morality is low and peer involvement is low.

Due to the facf that different extraneous variables appear to be important in each sample, no other comparisons can be made. It should be noted, however, that the samples do not show any conflicting results with respect to the association between the independent variables and crime involvement.

Furthermore, the small cell frequencies present in all of the three-way interactions associated with both samples does limit the reliability of that particular data and should be interpreted with caution.

General Versus Specific Threat of Punishment

The previous analyses demonstrate that general punishment threats--the certainty of punishment index and severity of punishment index--have some association with amount of reported crime (the crime involvement index) but only in conjunction with other independent and extraneous variables.

We now propose a preliminary examination of 11 specific offenses to determine the future value, if any, of considering the relationship between specific punishment threats--such as, certainty of punishment for drinking under age--and specific crime involvement--such as, criminal involvement for drinking under age--as opposed to using the general indices of these variables.

Silberman (1976:455) finds, in this connection, that "the threat of punishment is more important in deterring serious criminal activity (i.e., offenses that are mala in se) than in deterring minor offenses (i.e., mala prohibita)." He also suggests (1976:447) that his general indices are superior (overall) to using specific-item correlations. On page 50 , we define mala prohibita offenses as drinking under age and smoking pot, and mala in se offenses as using "hard" drugs, vandalism, theft under $50, joyriding, theft over $50 and assault. Three other offenses are afforded a "quasi-legitimate" status as they are either committed often but verbally rejected (shoplifting) or committed rarely but verbally accepted (sex with a minor, drunk and disorderly).

Tables 39 and 40 display the zero order (statistically corrected)[12] rho correlations between specific offense threat of punishment (certainty and severity) and specific offense crime involvement for each sample. For example, the perceived certainty of punishment scores for drinking under age are correlated with crime involvement scores for drinking under age. The results of this specific analysis are used for two purposes: to compare the strength of association between specific crime deterrence with the previous zero order index deterrence findings (see Tables 10 and 11); and to determine if mala in se correlations with crime

involvement are stronger, in general, than mala prohibita correlations.

The University sample shows no initial association between the certainty of punishment index and the crime involvement index (rho = .09). This sample demonstrates in Table 39 significant associations between certainty and crime involvement scores for smoking pot (rho = -.25, $p < .01$) and shoplifting (rho = -.21, $p < .05$). Neither offense is classified mala in see-smoking pot being mala prohibita and shoplifting "quasi-legitimate." In fact, the slightly stronger correlation is obtained for the mala prohibita offense.

The University students demonstrate no initial severity index-crime index relationship (rho = .01) and no corresponding associations emerge when specific offenses are considered in Table 39.

The Grant MacEwan sample has a rho of -.32 ($p < .001$) between the certainty of punishment index and crime involvement index. This general measurement of the relationship between certainty and crime involvement remains superior to the individual offense measurements presented in Table 40. Although eight offenses show a significant certainty-crime association, their respective correlations are lower (or similar) in magnitude than that of the initial index finding. In addition, the data suggest--with the exception of one mala in se offense, "hard" drug use (rho = -.31, $p < .001$)--that mala prohibita offenses have significantly stronger certainty-deterrence relationships. Both drinking under age (rho = -.28, $p < .001$) and smoking pot (rho = -.25, $p < .001$) are higher in value and significance than the "quasi-legitimate" offenses, shoplifting (rho = -.14, $p < .05$) and drunk and disorderly (rho = -.18, $p < .05$)

TABLE 39

SPEARMAN CORRELATIONS BETWEEN THREAT OF PUNISHMENT SCORES AND CRIMINAL INVOLVEMENT SCORES FOR 11 OFFENSES, UNIVERSITY SAMPLE (N = 99)

Offense	Certainty (-.09)[a]	Severity (.01)[b]
Assault	- .01	.01
Theft over	- .01	- .08
Joyriding	- .02	- .004
Sex with minor	- .13	.03
Theft under	- .06	- .06
Vandalism	- .01	- .10
Hard drugs	- .06	.07
Drunk and disorderly	- .15	- .03
Shoplifting	- .21*	- .14
Smoking pot	- .25**	.02
Drinking under age	.04	.17

[a]Original relationship between certainty of punishment index and crime involvement index.

[b]Original relationship between severity of punishment index and crime involvement index.

*$P < .05$.

**$p < .01$.

TABLE 40

SPEARMAN CORRELATIONS BETWEEN THREAT OF PUNISHMENT SCORES AND CRIMINAL INVOLVEMENT SCORES FOR 11 OFFENSES, GRANT MACEWAN SAMPLE (N = 153)

Offense	Certainty (-.32***)[a]	Severity (-.18*)[b]
Assault	- .08	.03
Theft over	- .18*	.03
Joyriding	- .13	.08
Sex with minor	- .01	- .19**
Theft under	- .14*	- .04
Vandalism	- .17*	- .04
Hard drugs	- .31***	- .03
Drunk and disorderly	- .18*	- .14*
Shoplifting	- .14*	- .21**
Smoking pot	- .25***	- .26***
Drinking under age	- .28***	- .23**

[a]Original relationship between certainty of punishment index and crime involvement index.

[b]Original relationship between severity of punishment index and crime involvement index.

*$p < .05$.

**$p < .01$.

***$p < .001$.

or the mala in se offenses, vandalism (rho = -.17, $p < .05$), theft under (- .14, $p < .05$) and theft over (rho = -.18, $p < .05$).

The rho correlation of -.18 ($p < .05$) obtained between the severity of punishment index and the crime involvement index for the Grant MacEwan sample is slightly lower in magnitude than that obtained by the mala prohibita, specific deterrence results--rho of -.23 ($p < .01$) for drinking under age and -.26 ($p < .001$) for smoking pot. In this analysis presented in Table 40, we see a significant association between specific severity and specific crime involvement scores only for offenses classified mala prohibita or "quasi-legitimate," (shoplifting has a rho of -.21, $p < .01$, drunk and disorderly a rho of -.14, $p < .05$, and sex with a minor a rho of -.19, $p < .01$).

In summary, the University data suggest that specific-item certainty deterrence is stronger than general index certainty deterrence; and that certainty of punishment is more important in deterring minor offenses as opposed to more serious criminal activity. In the case of Grant MacEwan, we find some conflicting results: although the general index certainty deterrence is stronger than the specific-item certainty deterrence, the opposite is true for severity. However, with the exception of "hard" drug use, again the mala prohibita offenses have stronger threat of punishment (certainty and severity) and crime involvement correlations than do offenses mala in se.

We conclude, therefore, that hypothesis six--proposing a stronger relationship to exist between perceived threat of punishment and reported frequency of offenses that are mala in se as opposed to mala prohibita--is not supported by our data. Similarly, hypothesis seven--proposing that there is a

general pattern of criminal deterrence not specific to any given offence--is only partially supported by our data.

A Summary of Major Findings

An initial comparison of the responses to the perceived certainty of punishment index, the perceived severity of punishment index, the perceived celerity of punishment index, the morality index and the peer involvement index suggests that the samples do not derive from the same or similar population(s). For this reason, each sample is treated as a separate entity in the ensuing analyses.

In terms of the proposed hypotheses, the following results are obtained from the correlational analysis and the analyses of variance.

Certainty of Punishment

The analyses show perceived certainty of punishment has the proposed relationship with crime involvement, though it is dependent upon the effects of other variables.

The University sample demonstrates a negative certainty-crime association when severity of punishment is high (rho = -.28, $p < .01$). This finding, however, does not explain a significant proportion of the variation in crime scores and must be considered weak. The suggestion of a similar association between certainty and crime involvement occurs when offense-specific deterrence is considered. The minor offenses, smoking pot and shoplifting, show certainty-crime zero order rhos of -.25 ($p < .01$) and -.21 ($p < .05$), respectively.

More consistent evidence that certainty "deters" crime is demonstrated

by the Grant MacEwan sample. Under the conditions of high severity and high religiosity, high perceived informal parental sanctioning, high morality and high severity, or low peer involvement there is a decréase in mean crime scores as certainty scores increase. Additional support for the analyses of variance findings are provided by the correlational analysis. That is, the original -.32 ($p < .001$) rho between certainty of punishment and crime involvement increases to -.50 ($p < .001$) when severity is high, to -.49 ($p < .001$) when parental sanctioning is likely, to -.38 ($p < .001$) when morality is high and to -.33 ($p < .001$) when peer involvement is low. Similarly, when 11 specific offenses are considered, this sample supports, to a lesser extent, the certainty hypothesis for eight offenses--using "hard" drugs (rho = -.31, $p < .001$), drinking under age (rho = -.28, $p < .001$), smoking pot (rho = -.25, $p < .001$), shoplifting (rho = -.14, $p < .05$), drunk and disorderly (rho = -.18, $p < .05$), vandalism (rho = -.17, $p < .05$), theft under (rho = -.14, $p < .05$) and theft over (rho = -.18, $p < .05$). Except for the offense using of "hard" drugs, the certainty proposition is stronger for mala prohibita offenses. The data, however, suggest some situations which produce a positive relationship between certainty of punishment and crime involvement. This occurs when severity is low and religiosity is high, or when morality is low and religiosity is high. These "anti-deterrence" conditions are reflected in the reduction of the original certainty-crime relationship controlling for religiosity--rho decreases from -.32 ($p < .001$) to -.26 ($p < .01$) when students attend church rarely and to -.26 ($p < .05$) when they attend church often. Similarly, when either morality or

severity is low, the zero order correlation reduces to -.14.

Severity of Punishment

The negative relationship predicted between severity of punishment and crime involvement is also, as shown with certainty of punishment, only applicable under certain conditions of other independent and extraneous variables.

In particular, the University sample is "deterred" from committing offenses when peer involvement and morality are low[13]. An "anti-deterrent effect" for males is also suggested by the third-variable tests (rho = 26, $p < .05$) but this is not strong enough to emerge as a significant interaction effect in the analyses of variance.

Stronger support for the severity-crime association is provided by the Grant MacEwan responses. In this sample, a moderate proportion of the variation in crime scores is accounted for by severity of punishment when certainty is perceived high and religiosity is high or when certainty is high and morality is low. A smaller amount of variance is explained by severity when respondents know few criminals or have low morality. The increase in the original severity-crime relationship of -.18 ($p < .05$) to a rho of -.33 ($p < .01$) for high certainty agrees with the above findings[14].

The offense-specific analysis offers even stronger evidence of the severity hypothesis for minor offenses, in particular those classified mala prohibita. The zero order rho correlations of -.26 ($p < .001$) for smoking pot, -.23 ($p < .01$) for drinking under age, -.21 ($p < .01$) for shoplifting, -.14 ($p < .05$) for

drunk and disorderly and -.19 ($p < .01$) for sex with a minor--between severity of punishment and crime involvement--attest to this claim. Unfortunately, there are some conditions under which mean crime scores increase as severity scores increase: when certainty is low and religiosity is high; and when morality is high and certainty is low. Again, we see corresponding evidence in the correlational analysis. To wit, the original severity-crime rho of -.18 ($p < .05$) decreases to .07 when certainty of punishment is low and to -.10 when religiosity is high. Although the original correlational analysis hinted at the possibility of severity intervening between morality and crime involvement (the reduction of the -.18 ($p < .05$) rho to -.04 under low morality and -.14 under high morality), we reject this argument in favor of the interaction effects occurring above. A similar suggestion that the severity-crime relationship is spurious, due to religiosity, is rejected for the same reason. The other results suggested by the correlational analysis--that severity is only related to crime involvement when parental sanctioning is likely (rho = -.26, $p < .05$), or when peer sanctioning is likely (rho = -.33, $p < .01$)--are not significantly confirmed by the analyses of variance.

Moral Commitment

The University students demonstrate the proposed decrease in crime involvement scores as morality scores increase, when peer involvement is high. A slight positive morality-crime association emerges when peer involvement is low and severity of punishment high. It thus appears that the morality-crime

relationship is qualified by the effects of peer involvement and severity of punishment in this sample. All other interaction effects occurring in the original three variable tests are not significantly substantiated by the more rigorous analyses of variance.

The Grant MacEwan sample shows morality, alone, to explain a moderate proportion of the variation in crime scores. It is suspected, however, that the explanatory power of morality is reduced somewhat because of multicollinearity occurring between morality and informal peer sanctioning. Informal peer sanctioning also explains some portion of the variation in crime scores. Additional variation in crime scores is also accounted for by morality in conjunction with other variables. A moderate amount of variance is explained by morality when church attendance and certainty of punishment are high, or when respondents know many criminal friends and attend church often. A small amount of variance is explained when certainty is high and severity low, when certainty is low and severity low, or when severity is low and religiosity is high. It should be noted that the morality hypothesis is very weak when certainty is low and severity is high, when peer involvement is low and church attendance is high, or when peer involvement is high and church attendance is low.

Peer Involvement

This variable (alone and with other variables) appears to explain the greatest proportion of variation in crime scores in both samples.

The University data suggests that the peer-crime relationship is, in

small part, conditioned by sex, i.e., males demonstrate the differential-association hypothesis more convincingly than do females, (the original peer-crime rho of $-.77$, $p < .001$ increases to $-.84$, $p < .001$ for males, and reduces to $-.60$, $p < .001$) for females). Similarly, crime involvement increases as knowledge of criminal peers increases, when morality is low and severity of punishment is high.

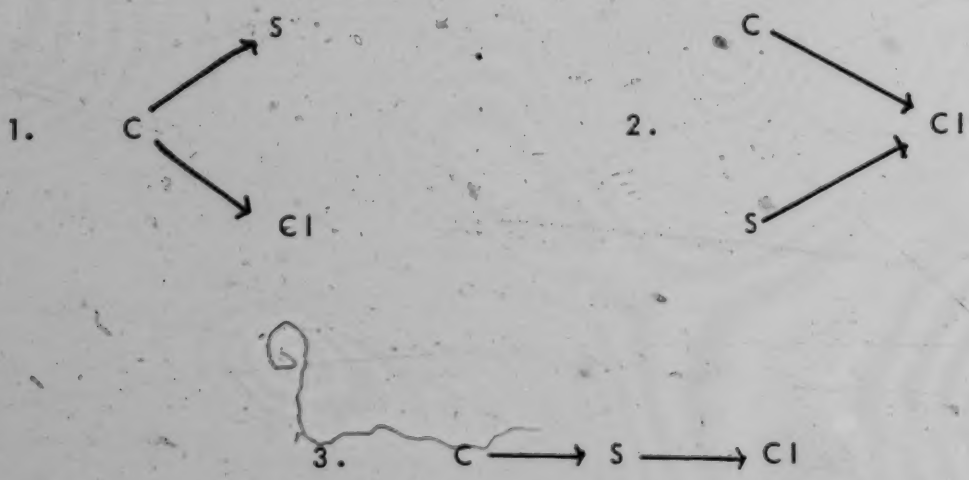
Peer involvement also exerts an independent "effect" on crime involvement in the Grant MacEwan sample (rho = $-.79$, $p < .001$). This variable shows additional strength of association with reported criminality when severity is high, when morality is low and religiosity is high, or when morality is high and religiosity is low.

In our final chapter, we will attempt to explain the results obtained for each hypothesis, and offer some suggestions for future study.

FOOTNOTES CHAPTER FIVE

[1]Age has a significant association with peer involvement (rho = -.21, $p < .01$), however, controlling for its effects does not alter the peer-crime relationship in any way. All three categories of age maintain the same, original -.79 ($p < .001$) rho between knowing criminal friends and committing offenses. Similarly, celerity of punishment has a .17 ($p < .05$) correlation with informal peer sanctioning. This extraneous variable is also significantly correlated with crime involvement (rho = -.46, $p < .001$). However, controlling for informal peer sanctioning does not affect the celerity-crime relationship. See Table 13 for the above zero order associations.

[2]Actually several models are possible: for example, if we denote C = certainty of punishment, S = severity of punishment and CI = crime involvement, three possible models are:

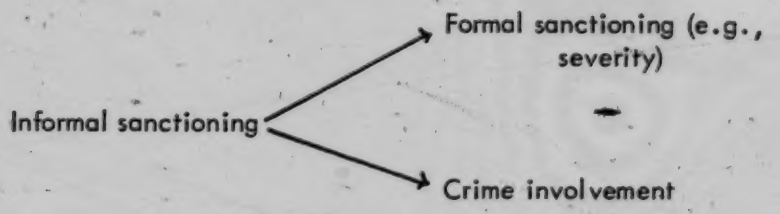


We are, in fact, testing the first model. The same argument applies when moral commitment is considered: again, if M = moral commitment:

, is the model we are testing.

It is impossible to definitively determine which model applies in our study as we are using a survey design. However, the data may indicate one model to be more likely than another and this could be helpful in future research.

[3]The model being tested in this case is the following:



[4]Although the dichotomy appears unusually high, the median and mean family income for University students is over $20,000 and only 18 respondents report incomes of $15,000 or less.

[5]Sex and morality are significantly related to both peer involvement and crime involvement--sex has a rho of -.32 ($p < .001$) with crime involvement and .33 ($p < .001$) with peer involvement, and morality has a rho of -.49 ($p < .001$)with crime involvement and .37 ($p < .001$) with peer involvement.

[6]For a detailed account of the mathematics underlying this partitioning of "explanatory-effects, "the reader is referred to Blalock (1972:317-348).

[7]Sex is not used as a "covariate" because of its natural two category dichotomy.

[8]Considering the complete series of analyses of variance (see Appendix E), it is apparent that certainty and severity do, in some analyses, interact. As severity is also highly conditioned by the effects of morality and peer involvement, what occurs is a complicated series of interactions nullifying whatever minor independent effects certainty might have. This could explain why removing severity from the analysis in Table 29 (analysis #3) results in certainty emerging as an explanatory variable.

[9]Only moral commitment and peer involvement remain as "factors" throughout the analyses of variance. Their relatively higher zero order association with crime involvement is used as the basis for this decision. For example, morality-crime rho is -.65 ($p < .001$) and the peer-crime rho is -.79 ($p < .001$) compared to the rhos of -.32 ($p < .001$) for certainty-crime, -.18 ($p < .05$) for severity-crime, -.21 ($p < .01$) for parental sanction-crime, -.46 ($p < .001$)

for peer sanction-crime and -.17 ($p < .05$) for religiosity-crime. It is actually possible to compute 21 combinations of these seven variables but the resulting volume of output would make such a undertaking impractical.

[10]Religiosity is the only variable not dichotomized above and below the mean value. Instead, a rare church attender is one who goes less than once a month.

[11]In addition to the low mean crime scores obtained for the "never wrong" morality responses, the relatively few responses (N = 22) in the "never wrong" and "sometimes wrong" columns probably compound the "masking-effect" we are witnessing.

[12]Nie et al (1975:289) redefine Spearman's r_s to correct for ties in the following manner:

$$r_s = \frac{T_x + T_y - \sum_{i=1}^{n} d_i^2}{2(T_x T_y)^{\frac{1}{2}}}$$

where d_i is the difference between the ranks of the two variables for case i, and where T_x or T_y is to be defined by the quantity

$$\frac{N(N^2 - 1) - \sum R (R^2 - 1)}{12}$$

where R is the number of ties at a given rank for X and Y, respectively.

[13]This is not confirmed by the initial correlational analysis as both factors are not controlled for at the same time

[14]The majority of the analyses of variance findings include three variable interaction effects which cannot be confirmed by the two variable interaction effects from the correlational analyses.

CHAPTER SIX

DISCUSSION AND CONCLUSIONS

In this chapter we discuss the significant findings reported for the University and Grant MacEwan samples. This includes an attempt to explain sample differences (when applicable) with respect to the hypotheses presented in Chapter Three. Silberman's conclusions are re-examined in terms of the present results and alternate explanations are offered when necessary. In conclusion, we suggest some avenues for future research in the area of perceived deterrence based on the observations of the present analysis.

Threat of Punishment and Crime Involvement

The Certainty of Punishment Hypothesis

Considerable evidence has amassed since the late 1960's to support the certainty hypothesis (e.g., Gibbs, 1968; Gray and Martin, 1969; Tittle, 1969; Bean and Cushing, 1971; Teevan, 1972; Logan, 1972, 1974; Attunes and Hunt, 1973; Tittle and Rowe, 1974). In fact, even literature claiming little support has been qualified, criticized or re-analyzed to demonstrate a certainty-crime relationship (e.g., the capital punishment studies and Chiricos and Waldo, 1970).

Despite the similarities between our research and past self-report studies[1], the present results offer, at best, only partial support for the certainty

of punishment hypothesis. It may even be construed that some of our findings are contrary to recent empirical inquiries.

Silberman (1976), for example, finds a significant negative correlation between certainty of punishment and crime involvement when respondents are male or credibility of arrest is high, i.e., "there is at least some probability that those who commit the offence are punished."[2] He finds in a subsequent analysis of variance--which excludes the sex and credibility variables--that certainty has both an independent inverse relationship with crime involvement and an additional negative certainty-crime effect when morality is low.

No consistent evidence of Silberman's findings or, indeed, any main or interaction effects involving certainty emerge in the University sample's analyses of variance. The only noteworthy observation in this sample is a weak zero-order association (rho = -.28, $p < .01$) between certainty of punishment and crime involvement when severity of punishment is perceived high. This conditional relationship--supported by the Grant MacEwan data (rho = -.50, $p < .001$)--is also reported by Logan (1972) for his aggregate data on certainty of imprisonment[3]. Logan concludes, "...the regression of crime rate on certainty of imprisonment has a steeper negative slope under the condition of high severity for five of the offense categories (including all felonies), though this effect is mild" (1972:70). Simple deterrence theory predicts such a finding (Zimring and Hawkins, 1973:75). In a brief review of classical deterrence concepts Cousineau recounts the following: "...Beccaria and Bentham attempt to expand the concept of deterrence into the construct of general deterrence. Believing in an informed,

rational public, they argue that the certain, swift and continuous imposition of increasingly painful legal consequences upon offenders will discourage potential offenders from becoming actual criminals" (1976:16-18). The rationale behind these beliefs are motivated by a utilitarian philosophy (see page 4 for a discussion of this principle).

The Grant MacEwan analyses of variance also indicate no independent association between certainty of punishment and crime involvement; however, a number of important conditional effects do emerge. In particular, a significant proportion of the variation in crime scores is explained by the following interactions: certainty-severity-religiosity, morality-certainty-religiosity, certainty-parental sanctioning, certainty-morality-severity, and peer involvement-certainty. Unfortunately, all of the three-way conditional relationships contain cells of such low frequency to be considered reliable (see the breakdown tables presented on pages 111 and 113). It appears, however, that Grant MacEwan students do exhibit an inverse relationship between certainty and crime involvement if parental sanctioning is perceived likely or involvement with criminal peers is low.

The relationship between informal sanctioning (fear of losing parental respect) and formal sanctioning in deterring crime involvement is discussed extensively in the literature on prisons. Vedder emphasizes that one of the most devastating by-products of imprisonment is loss of family respect (1952:52-74). He suggests inmates fear loss of family respect more than the isolation from society. Lewin describes two of the more important elements in the threat of

punishment as being the injury to social standing and danger of exclusion from the group (1951:138). Certain imprisonment implies a deprivation of status and is accentuated by losing the respect of meaningful others (Floch, 1964:11-12). It is not unreasonable, therefore, to speculate that fear of informal stigmatization will generally be greatest among those who perceive a high certainty of punishment for committing illegal acts. After all, if one does not feel any fear of being caught then why should one even consider the parental (or peer) disgrace (Andenaes, 1966:961). Some empirical evidence to support this argument exists. Willcock and Stokes (1968) conducting a British Government Social Survey on deterrents to crime among 15 to 21 year old youths, find their male respondents to perceive family opinion as the single most important consequence of arrest[4].

It is also possible to imagine a link between formal punishment, knowledge of criminal others and crime involvement. In particular, it is envisioned that certain punishment is a more effective deterrent for those who have few criminal ties (Silberman, 1976). As Zimring and Hawkins (1973) point out, membership in any group (criminal or noncriminal) results in personal actions being visible and accountable to the group. Therefore, it is plausible that membership in a group includes strong pressures to conform to group expectations. Thus, if one is a member of a group committing illegal acts it is not unreasonable to expect that there will be group pressure to disregard formal threats (Cohen, 1955; Miller, 1958; Sykes and Matza, 1957; Cohen and Short, 1968). It is also conceivable that membership in a criminal group lowers one's expectations of actual punishment. For example, if crime statistics are correct,

the probability of being caught is low and presumably those who associate with criminal others would recognize this fact (Nettler, 1974:43-97). The study quoted earlier by Willcock and Stokes does, indeed, show a significant positive relationship between number of offences committed by youths and their perception of immunity from detection. These authors suggest this relationship to be directly a result of detection rates for the youths being very low. Similarly, Claster finds that his training school delinquents perceive significantly lower probabilities of being arrested themselves for a hypothetical offence than does a sample of non-delinquents (1967:80-86). From a deterrence perspective, one could argue that this type of perception helps to facilitate delinquency rather than deter it. Conversely, it is speculated that those respondents who are certain of arrest but have few criminal ties overestimate the likelihood of punishment for commission of offenses (Zimring and Hawkins, 1973:144; Morris, 1951:12; Wilkins, 1964:119; Tittle and Logan, 1973:383).

Although previous studies do not report the certainty-crime relationship to be totally dependent on the effects of informal sanctioning and peer involvement, partial responsibility lies in their failure to control for these factors. Silberman is the sole researcher who employs a comparable methodological design. He, however, considers only one possible measure of the socialization concept--moral commitment. This variable is important, but equally impressive with respect to explaining crime is informal sanctioning, i.e., informal parental and peer sanctioning.

This general neglect of informal social pressures could partially explain

why those researchers who consider the simultaneous contributions of independent and control variables find their data to explain only 40 percent (Tittle and Rowe, 1974) to 48 percent (Silberman, 1976) of the variation in crime rates or scores. Both of the present samples show informal sanctioning, moral commitment, peer involvement and formal sanctioning to explain about 70 percent of the variation in crime scores[5].

Although we suggest that the discrepancies between the Grant MacEwan certainty-crime results and earlier research are, in part, due to the inclusion of additional explanatory variables (informal sanctioning)[6], it still remains that certainty is not related to crime involvement in the University sample.

If one could argue that the older a person becomes, the greater one's stake in conformity (vis-a-vis increased acquisition of material goods, social status and general conservativeness) then it would be possible to link age with certainty of punishment, i.e., formal punishment being a more effective deterrent with older people than younger people. Also, it may be that younger people have a less developed sense of the importance of the future than adults and may be prone to making different kinds of guesses about the outcome of risks. "Particular stages in adolescence may be associated with different reactions to authority, which in turn affects threat responses" (Zimring and Hawkins, 1973: 116). Thus, it could be that the differences in certainty-crime results in the present samples are due to age differences in the samples. Grant MacEwan consists of 28 percent over the age of 25 years, while the University sample has only three percent in this age bracket. Unfortunately, however, eliminating

those respondents over the age of 25 years from both samples does not alter the reported zero order correlation.

Further to the age-certainty argument, it is possible that a sex-certainty difference exists (Silberman, 1976; Tittle and Rowe, 1973). It may be that females are so oversocialized and/or males so involved in criminal activities that the former do not require additional punishment threats while the latter--experiencing more punishment--are more aware of punishment threats. Controlling for both sex and age (only using respondents under 25 years), we find no change in the University results. We do find, however, that the 33 Grant MacEwan males show a -.46 ($p < .001$) rho correlation between certainty and crime involvement compared to a -.21 ($p < .05$) rho for the 76 females. Although these correlations reconcile Grant MacEwan results to those reported by Silberman, they do not explain the discrepancy between the University and Grant MacEwan certainty-crime data.

Why, then, does the University sample remain the only student body unaffected by fear of certain punishment? It could be--as other researchers have found--that, while the "total offense category" displays little deterrence association, certain types of offenses do. This possibility will be explored later.

A second possibility is that the University and Grant MacEwan students differ with respect to the belief in the credibility of punishment. If it can be demonstrated that both samples commit approximately the same amount and frequency of minor and serious crimes but that Grant MacEwan students are caught more often, this could partially explain why the University students are

more immune to punishment threats--the argument being that threatened punishment is only effective if people believe it will be applied (see discussion on pages 4 and 5 ; Geerkin and Gove, 1974:2; Zimring and Hawkins, 1973:141-172; Silberman, 1976:457; Fattah, 1977:23-24). If respondents are aware from actual experience that they can commit offenses without paying a penalty, this could undermine the general deterrence concept.

The mean crime involvement scores presented on page 58 show, on the average, the samples commit a similar amount of crime--the University score is 17.03 and the Grant MacEwan score is 17.14. Table 41 compares the percentage of crimes committed and the percentage of crimes officially detected (self-reported by respondents) for each sample with respect to 11 offense categories.

The results of Table 41 suggest that the majority of offenses committed by either sample are not officially detected. There is a slight tendency for the more serious offenses to be detected more often than the minor offenses (Murphy, 1964; Miller, 1967); however, the numbers committing these offenses are, in some cases, low and therefore the percentage figures must be interpreted cautiously. The data also show a consistently lower percentage of University students apprehended than their Grant MacEwan counterparts.

In a way, both findings are supportive of our arguments. The large amount of officially undetected crime in the Grant MacEwan sample could partially account for why certainty of punishment does not independently explain variation in crime scores. Similarly, the even greater percentage of "hidden" offenses in the University sample could indicate less credibility and even less

TABLE 41

A COMPARISON OF REPORTED AND OFFICIALLY DETECTED CRIME FOR 11 SPECIFIC OFFENSES, UNIVERSITY (N = 99) AND GRANT MACEWAN (N = 153)

	University		Grant MacEwan	
	Percentage Committing Offense	Percentage Detected	Percentage Committing Offense	Percentage Detected
Drinking under age	87 (86)	5 (4)	79 (121)	7 (9)
Drunk and disorderly	36 (36)	0 (0)	35 (54)	6 (3)
Smoking pot	56 (56)	2 (1)	56 (85)	6 (5)
Using "hard" drugs	16 (16)	0 (0)	21 (32)	3 (1)
Vandalism	22 (22)	9 (2)	14 (22)	9 (2)
Shoplifting	46 (46)	6 (3)	46 (71)	13 (9)
Theft under	19 (19)	11 (2)	24 (38)	16 (6)
Theft over	3 (3)	0 (0)	6 (10)	20 (2)
Joyriding	5 (5)	0 (0)	5 (8)	13 (1)
Assault	3 (3)	0 (0)	3 (5)	0 (0)
Sex with minor	17 (17)	0 (0)	11 (17)	6 (1)

respect for the efficacy of certain punishment.

One restriction must be applied to the above argument. No attempt is made to assess the differences in frequency of law violation between the samples. This has been demonstrated, by previous research, to be a strong determinant of official detection (Erickson and Empey, 1963).

It does appear, from the above discussion, that future deterrence research should consider a measure of police efficiency, if at all possible (Logan, 1974:13).

The Severity of Punishment Hypothesis

The present samples do not indicate an independent negative relationship between perceived severity of punishment and crime involvement. This concurs with the majority of previous research findings, in particular, the perceived deterrence literature (Chiricos and Waldo, 1972; Teevan, 1974; Silberman, 1976).

Both the University and Grant MacEwan analyses of variance reveal the proposed severity-crime association when moral commitment is low or knowledge of criminal peers is low. Although a number of three-way interactions involving severity do emerge from the respective analyses of variance (see pages 99 and 105), the accompanying breakdown tables (see pages 111 to 113) contain cells of under ten cases and will, therefore, be ignored in the present discussion. To pursue a theoretical explanation for such results may be futile as increasing cell size may well change the results[7].

The two-way interactions found in the present samples have not been reported before. Silberman--the sole researcher to consider severity, morality and peer involvement as possible deterrents to criminal involvement--excludes perceived severity from simultaneous analysis with the other factors.

The finding that formal punishment threats enhanced by low morality deters criminal acts supports the arguments of Morris (1951), Andenaes (1966) and Zimring (1971). These theorists claim that if ascribed legitimacy for legal codes is high there is little need for a formal punishment threat as conscience not fear is the motivating factor. However, if moral support for laws is weak, then it is fear of severe reprisals not personal conscience that prevents illegal activity. We will consider this argument further in a later section.

In the previous section we discuss the relationship between certainty, peer involvement and criminal involvement. It is proposed that extensive association with criminal others acts to reduce the potency of formal punishment threats (see pages 136, 137). We suggest two reasons why this might occur. Assuming that group pressures force conformity to group attitudes or beliefs, and assuming criminal subgroups may have beliefs or attitudes antithetical to societal beliefs or attitudes, we suggest criminal subgroups might deny the efficacy of punishment threats in order to ensure their survival. If this is the case, we expect an individual who associates with a criminal subgroup to support this anti-deterrent philosophy. We further speculate that being a member of a criminal subgroup means one acquires through experience the knowledge that few crimes are, in reality, officially detected. This, in turn, would lower the credibility of punishment.

Conversely, we propose that respondents who know few criminal friends may overestimate the threat of punishment and such exaggeration of perception could result in low criminal involvement. Since severity is another element of formal punishment we argue that the same logic could apply here also.

The University data also provide some weak correlational evidence of an anti-deterrent effect, i.e., positive severity-crime association, for male University students (rho = .26, $p < .05$). Silberman's study finds the opposite result ($r = -.19$, $p < .05$) as does the Grant MacEwan sample (rho = -.18, $p < .05$). Reviewing the frequency distributions for our variables, we notice that University males admit to knowing a greater percentage of criminal friends than do University females or Grant MacEwan males or females--64 percent versus 47 percent for the latter subgroups. Returning to the arguments presented above and on page 137 , we suggest that it is the University male's greater association with criminal peers (compared to the other subgroups) that appears to decrease the potential fear of severe sanctions. To cite Tittle and Rowe, "If one were willing to postulate that the major factor in human behavior is fear of sanction, he could conceptualize various social or psychological phenomena as variables which increase or decrease fear of sanctions. Thus 'differential-association' might be considered a condition which reduces fear of sanction" (1974:461). Indeed, if differential-association does reduce fear of sanctions, we would expect to see, for example, a negative severity-crime trend for female University students as they profess to know fewer criminals. This does appear to occur to some extent--the initial total sample rho of .01 between severity and

crime involvement decreases to -.11 for females.

The Grant MacEwan sample, on the other hand, shows a significant inverse correlation between severity and crime involvement when certainty is high (rho = -.33, $p < .01$) or informal sanctioning is high (rho = -.26, $p < .05$ for parental sanctioning and rho = -.33, $p < .01$ for peer sanctioning).

That the severity-crime relationship is so affected by certainty is predicted by the general deterrence theory and supported by a number of research studies (Gibbs, 1968; Tittle, 1969; Logan, 1972; Gibbs and Erikson, 1973; Attunes and Hunt, 1973). Logan cautions that "controlling for certainty removes only one of several confounding factors...others still remain--such as, a possible reverse positive effect of crime rate on severity (due to more severe penalties being imposed by courts or legislative bodies), or a positive 'specific' effect, as opposed to negative 'general' effect, of severity on criminal conduct" (1972:70). Logan believes that if these problems are adequately handled, the negative partial relationship between severity and crime rate might well be stronger.

Similarly, we posit in an earlier discussion (see page 135) that informal sanctioning or stigmatization effects must be recognized as a formidable element of the message communicated by many legal threats. As Zimring and Hawkins point out, "Imprisonment involves demotion to the socially depressed and disapproved status of prisoner or convict, and the label is likely to remain longer than the sentence of imprisonment" (1973:190). Other authors specifically emphasize the sensitivity of people to family or peer reaction to formal punishment and the resulting alteration in status (Vedder, 1952; Willcock and Stokes, 1968).

Although it appears that the certainty-severity and informal sanctioning-severity interactions apply only to the Grant MacEwan sample, it must be remembered that these effects are not strong enough to emerge in the more rigorous analyses of variance. Secondly, if one does control for either certainty or informal sanctioning in the University sample, an inverse trend between severity and crime involvement does emerge. For example, controlling for perceived certainty in the University sample decreases the initial total sample rho of .01 to -.10 when certainty is high and to .12 when certainty is low. Similarly, controlling for parental sanctions the rho is -.11 when sanctioning is likely and .14 when it is not and controlling for peer sanctions the rho is -.14 when sanctioning is likely and .15 when sanctioning is unlikely.

The Celerity of Punishment Hypothesis

There is a persistent belief that swift punishment reduces criminal involvement. This conviction is based on experimental work conducted in the area of learning theory. Lawrence and Festinger suggest, "It is a basic tenet of operant theory that the operant act and the reinforcer must be closely paired if the actor is to make the association between the two " (1962:5). Many deterrence theorists similarly rationalize that it is the time lag between being caught and punished that reduces the deterrence effect--particularly for serious crimes (Mattick, 1966; Gibbs, 1968, 1975; Andenaes, 1975).

The present study does not confirm earlier speculations. We find no relationship (in either sample) between perceived celerity of punishment and lower

crime scores. In addition, we cannot totally blame our results on a perceived lengthy time lag between being caught and punished. Both samples show only four percent of the respondents perceive a delay of over six months between charge and conviction: 60 percent felt a moderate delay of two to six months to be likely--regardless of type of offense.

It could be as Fattah argues:

> If the actual application of the legal threat is to be associated in the minds of potential offenders with the type of behavior threatened, then such infliction of punishment has to be prompt and take place immediately or a short time after the crime has been committed, (see Estes, 1944; Hunt and Brady, 1955; Azrin, 1956, 1958; Kelleher and Cook, 1959; Chopra, 1969). (1977:31)

If this is true, then our indicator of celerity may not be the most valid measure of perceived celerity. Given that even a delay of two to six months before sentencing may be perceived as lengthy--then a more preferred measure of celerity may be to test the delay between commission of offense and detection by official authorities.

To be fair, we admit an absence of truly serious types of crimes in our study--the most serious being assault and theft over $50. In addition, only a small portion of either sample (approximately three percent) confess to such serious violations. Thus it may be that we are not even obtaining a sufficient variation in response to our celerity indicator due to the types of offenses chosen for study and the composition of our samples.

Again, as with the other threat of punishment indicators, partial

explanation for our results may be attributed to the excessive proportion of undetected crime, particularly among the less serious offenses. This may nullify the deterrence effects of swift justice.

In any case, our results question the efficacy of the celerity hypothesis and we recommend more research on this aspect of sanction threats.

General Versus Specific Threats of Punishment

Earlier in our discussion (see page 139) we posit that although the general threat of punishment does not "deter" crime in the University sample, such a relationship might emerge when specific offenses are considered.

Evidence of a significant negative certainty-crime association does occur for two minor offenses--shoplifting and smoking pot--in the University sample. In fact, these particular offenses are consistently deterred by perceived punishment threats in both samples--with the exception of perceived severity in the University sample. However, it should be noted that no offense is deterred by University perceived severity of punishment.

Cameron (1966) suggests it is the amateur shoplifter or "snitch" who is deterred by threat of punishment. She claims that these non-professional petty thieves are highly susceptible to sanction threats as they have little to gain and much to lose. This group often consists of young children or housewives, and is in some respects reminiscent of the present samples who admit to committing the majority of their thefts between the ages of five and 15 years.

A number of other studies also report similar results. Chiricos and Waldo

(1972) and Teevan (1977) both find marijuana use and shoplifting (to a lesser extent) to be significantly deterred by certain arrest.

There is one problem with comparing the present results to Teevan's or Chiricos and Waldo's. We employ a slightly different method of distinguishing between offenses classified mala prohibita and mala in se. According to our definition, smoking pot and shoplifting are both viewed as "minor" offenses as they are either accepted by 50 percent of the sample (marijuana use) and/or committed by 50 percent of the sample (shoplifting). The earlier researchers only consider "verbal" acceptance of the offense, and shoplifting is, therefore, classified mala in se.

Despite this difference in definition, we still maintain there exists a trend in both samples favoring the hypothesis proposed by Andenaes (1966) and Zimring (1971)[8]. Zimring suggests:

> When a threatened behavior is considered to be a serious breach of society's moral code the major explanation for the higher rate of complement behavior is the strongly socialized citizen's sense of right and wrong, rather than his special sensitivity to the negative aspects of threatened consequences. Where a threatened behavior is considered a less drastic breach of the moral code, a special sensitivity to the negative aspects of threatened consequences may play a noteworthy part in explaining the difference between the two groups.
>
> (1971:41-42)

We must, however, qualify the above statement by Zimring. Three mala in se offenses included in our analyses are committed so infrequently as to render any definite conclusions unreliable. These offenses are assault, theft over $50

and joyriding. (See Table 44 for their respective frequency distributions.) Elimination of these offenses does not alter the described trend. We still observe that the effectiveness of threat of punishment varies in inverse proportion to the moral seriousness of the crime.

One exception to this rule is using "hard" drugs. This mala in se offense does show a moderately significant negative correlation between certainty and crime involvement in the Grant MacEwan sample. Silberman (1976) also finds a significant negative correlation with this offense, but it is not quite so strong.

There are no observable differences in our samples to account for this exception: detection is infrequent in both samples, the percentage committing the offense is similar in both samples, and both samples show this to be a peer-related crime (see Tables 41 and 42).

In theory, one would probably expect that a crime as serious as "hard" drug use--often entailing trafficking and/or prostitution--would be less susceptible to sanction threats. Indeed, it has been proposed that this offense is habitual or irrational in nature and involves the support of a strong drug subculture (Lindesmith, 1957; Chambliss, 1967).

In any event, further analysis of this offense may be required to explain our differing results. We recommend testing the relationship between certainty and crime involvement for "hard" drug use controlling for sex, age, socioeconomic status, frequency of drug use, involvement in a drug subculture and type of drug used.

Neither Silberman's data nor the University sample demonstrate a

negative association between threat of punishment and criminal involvement for the alcohol related offenses (also classified mala prohibita or quasi-legitimate)--drinking under age and drunk and disorderly. This is not surprising as a number of studies of alcohol abuse find similar results (Ross and Campbell, 1968; Andenaes, 1968; Bowers, 1968; Robertson et al, 1973). It appears for these offenses that third factor influences sometimes lessen certainty of sanction. For example, Ross and Campbell find police and courts, when faced with increased penalties for drunken driving, tend to react with leniency with respect to arrest and sentencing. In the case of the University sample it could be that the incredibly low detection rate--five percent for drinking under age and 0 percent for being drunk and disorderly--lowers the credibility of sanction threats. The Grant MacEwan sample shows a slightly higher rate of detection--seven percent for drinking under age and six percent for being drunk and disorderly (see Table 44).

We should mention, however, that the present study makes no attempt to discover the circumstances surrounding the drinking offenses. Certain drinking offenses may have less potential for sanction threats than others, e.g., chronic alcoholism (see Foote, 1956; Pittman and Gordon, 1958; Bittner, 1967).

Level of Analysis

Silberman (1976) claims his data indicate a general deterrence effect which "spills over" to prevent the commission of even those offenses not normally subject to deterrence theory. According to Silberman, this occurs because:

> The "self" is an organized response to the rules governing the actions of society which are incorporated

> into the experience of the individual when he takes the role of the "generalized other." The individual not only reacts to the regulations of specific acts by the society around him, but his self is organized around his responses to society's regulation of several acts ....(Thus) a sense of moral commitment, (and a fear of punishment) should theoretically be organized around a "set" of societal regulations rather than as a response to a single regulation. (1976:456)

The present samples demonstrate conflicting evidence as to the value of using an index level analysis as opposed to considering specific offense threats of punishment. Overall, it appears that offense-specific threats may provide more valuable evidence of the efficacy of sanction threats, particularly severity of punishment (Logan, 1972)[9].

It is difficult to actually comment on this proposal by Silberman as this thesis does not consider specific-offenses under control situations. We do feel that our data suggest more research on specific offenses--with special consideration given to studying the effects of perceived sanction threats on serious offenses.

Socialization Versus Differential-Association

The Morality Hypothesis

The hypothesis concerning moral commitment to existing legal codes and crime involvement is based primarily on research by Silberman. He claims moral commitment to be the strongest predictor of "why people obey the law."

The present study, while conceding a significant negative relationship between morality and crime involvement, does not confirm this variable to be the

most important.

The correlational analyses of University data show a moderate negative morality-crime association (rho = -.49, $p < .001$) which increases when respondents are male (rho = -.58, $p < .001$) or perceive high parental sanctioning (rho = -.61, $p < .001$). That informal sanctioning should strengthen the morality hypothesis in this sample is not an unexpected finding. Control theorists suggest that human beings require early and continual training to develop social behavior. Presumably some of this conditioning would include both informal threats of punishment and actual punishment administered by parents (Trasler, 1962; Eysenck, 1964; Hirschi, 1969; Nettler, 1974). Further, it is not uncommon to find that denial of affection or respect is one method that parents use to secure compliance (Dreikers, 1964:68-72; Dodson, 1970:203-239). Inasmuch as the University sample is composed of young students it is not unreasonable to assume that many of these respondents still reside in their parental home and rely on their parents for financial support. We propose that these students may still be directly influenced or subjected to parental discipline and control. On the other hand, we would not expect--and do not find--that parental sanctions influence the morality-crime relationship in the Grant MacEwan sample. These latter respondents are older, of more diverse SES and presumably a greater proportion are living independently from their parents.

We are also not surprised to find in the University sample that male legal behavior is more influenced by morality than is female legal behavior. We have shown earlier (on page 114) that University females appear to be more susceptible

to some aspects of formal punishment threats (perceived severity) than their male counterparts. We hypothesize that this is due to University males knowing more criminal peers than the females and, as a direct result of this contact, that males learn they can escape punishment for their illegal activities. This low detection rate, we propose, lessens the credibility of punishment threats. We now propose that University males--are more likely to be prevented from committing criminal acts by personal morality. Again, we would not expect--and do not find--this to be the case for Grant MacEwan students. They, like University females, profess to some extent a belief in the efficacy of formal punishment threats.

The more rigorous University analyses of variance show that morality has an independent relationship with crime involvement only if sex and informal sanctioning are excluded as "factors" from the analysis (see page 99). In this situation only, the morality hypothesis is further conditioned by the level of perceived severity of punishment. This interaction between morality and severity is not reported by Silberman or others. However, as we suggest elsewhere, this is to be expected as previous research does not include these variables in a simultaneous analysis.

The Grant MacEwan data, on the other hand, do show morality to have a more consistent independent association with crime involvement[10]. Again, as with the University results, the morality-crime association is significant when severity is perceived to be low[11]. In addition, both samples appear to have a number of other significant three-way interactions (in the analyses of variance presented on pages 99 and 105) which will not be discussed at this time because of their low cell

frequencies[12].

To explain the meaning of the significant morality-severity-crime association we refer to an earlier discussion of this issue (see pages 143, 144). We propose that severe punishment threats and moral commitment are complementary. That is, if moral support for a law is strong then severe punishment threats are unnecessary; however, if moral commitment is weak then only severe punishment threats can force compliance to a law (Morris, 1957; Andenaes, 1966; Zimring, 1971). To illustrate this assumption we suggest that the strongest deterrence situation would be one where the crime is most universally repugnant, e.g., the act of incest. Given this situation of high moral abhorrence, it is not unreasonable to expect formal threats of severity to be perceived as being unnecessary or low. In addition, for laws that receive high moral support it is not unusual for people to perceive the likelihood of courts or police demanding only the minimum penalty required by law. Plea bargaining or allowing people the benefit of doubt as to their guilt is often characteristic of the more serious crimes (Newman, 1969). Thus, we propose it is not incongruent to find that our sample commit fewer crimes when morality is high but severity is perceived low.

The Grant MacEwan sample also reports a significant interaction effect between morality and religiosity. It appears from the breakdown tables that greater morality is associated with less crime when church attendance is high (see pages 114, 115). This finding is consistent with the doctrine of structured religion which historically is one contributor to the development of the present legal system. In this sense, the institutional church system could be characterized as a

conservative and conventional institution--a strong defender of the status quo. Therefore, it is not unreasonable to speculate that highly religious respondents are oversocialized individuals who would defend conventional moral beliefs and commit few offenses. After all, these people have a responsibility to both their conscience and their faith. Further, we propose that this finding--not evident in the University data--is, in part, due to the age and sex composition of the Grant MacEwan sample. Unlike the University students who are predominately under 25 years and 50 percent male, this community college group is two-thirds female and one-third over the age of 25. Published statistics consistently report that both church attendance and strong religious beliefs are positively related to older and female respondents (Canadian Gallup Poll, July, 1973; NORC Survey, March, 1974)[13]. On the other hand, a number of empirical studies of religiosity among U.S. undergraduate college students (17 to 23 years of age) show a steady decline in belief and participation in conventional religion over the past 50 years (Morris and Small, 1971; Goertzel, 1972; Yankelovich, 1972; Hasting and Hoge, 1976). Lehman, in particular, finds in his survey of 15 midwestern U.S. colleges that undergraduate respondents in the faculties of sociology and psychology are even less religious than students of other disciplines (1974:205-220). The U.S. researchers posit that this decline in traditional religious commitment among young university students is due to their striving for greater individualism and personal autonomy. They suggest college youths are disenchanted with the conventional beliefs of their parents and are increasingly being attracted to countercultural behavior, e.g., interest in the occult. This, claim the researchers, is one form of protest against adult authority.

Morality Versus Peer Involvement

One question still remains unanswered at this point. Why do we find the morality-crime hypothesis to be of lesser importance--particularly for the University sample--than does Silberman?

It could be that the present samples--in particular the University students --are involved in peer groups whose values are somehow antithetical to inducing conformity to conventional laws (see above argument on the morality-religiosity-crime association as it applies to the University sample).

Indeed, we have commented elsewhere that both samples appear to know an unusually large proportion of criminal peers, i.e., the University sample reports 56 percent knowing friends arrested and the Grant MacEwan sample 47 percent.

That peer influence could alter the positive effects of morality--particularly for younger people--is predicted by criminological theory and supported by social-psychological research on conformity (Aronson, 1972). Zimring and Hawkins (1973) suggest that group pressures can be one of the most viable eroders of personal values if subgroup values and general societal values are in conflict. Conversely, if personal values are in conflict with subgroup values which support the law, this can also force compliance to societal rules. To quote Zimring and Hawkins:

> In considering the way in which group pressures may moderate individual propensities, it is necessary to distinguish between situations in which group values include respect for the law and disapproval of criminal conduct, and those that underlie the legal threat. Strong pressure

> to conform to group expectations will be generated by the prospect that his decision will become known.
>
> (1973:213-214)

Zimring and Hawkins believe that when an individual has to choose between his underlying beliefs (or threat of punishment for that matter) and fear of disapproval by his subgroup, his subsequent actions may belie his basic morality or fear of formal punishment:

> A number of studies of the operation of group factors upon conformity, which compare responses made under public and private conditions, show clearly that conformity is much greater in the public context (Deutsh and Gerard, 1955; Thibault and Strickland, 1956).
>
> (Zimring and Hawkins, 1973:214)

In general, experimental research conducted on conformity supports Zimring's assertions, but suggests that it is not only fear of group reprisals that effects compliance (Asch, 1951, 1956; Milgram, 1963, 1965). Obedience to authority, promise of future rewards and identification with influencer also effect degree and permanence of conformity (Aronson, 1972:2-45).

We conclude, therefore, that the relationship between morality, peer pressures to conform and subgroup identification should be explored in greater depth.

Informal Social Pressures

Tittle postulates, "that any consideration of a socialization variable must include measures of the positive and negative sanctions of an informal and interpersonal nature" (1969:422).

Although not a principle focus of the present study, informal sanctioning appears to play a modest role in explaining criminal involvement. The fear of losing peer respect, alone, "explains" a moderate proportion of variation in crime scores in the Grant MacEwan sample. Similarly, in both samples, those respondents who perceive it "likely" they would lose peer respect, showed a considerably higher relationship between formal threat of punishment and crime involvement, (see pages

The fact that formal sanctions and stigmatization effects (informal sanctions) are so closely interwoven is not surprising. Both Tittle (1969) and Zimring and Hawkins (1973) predict as much. According to the latter authors, it is not only the "actual" shame that accompanies public detection of an illegal act that acts as the deterrent but also the realization beforehand that such shame will occur.

Both articles express doubt as to future empiricists being able to assess the exact contributions of either variable, i.e., informal versus formal sanctions. As Zimring and Hawkins explain:

> The prospect of stigmatization functions differently from the threat of other types of consequences (pain or confinement) because it is of special importance to those who attach significance to the judgment of others and because the sting of community attitudes is difficult to administer to offenders in calibrated doses.
>
> (1973:193)

Similarly, Tittle notes, "informal sanctions are more difficult to take into account because they involve questions of conflicting normative standards and varied group

affiliations" (1969:422).

It is also possible that the stigmatization variable(s) may be even more important in specific deterrence research, as is suggested by labeling theorists (Becker, 1964; Schur, 1969; Erikson, 1966).

Nonetheless, the results of the present study seem to indicate that authors such as Chiricos and Waldo (1972) may be "premature" in their assumptions. They advise that official detection alone is sufficient to account for the message communicated by many legal threats--"if the criminal can be sure that there will be no police action, he can generally rest assured that there will be no social reprobation" (Andenaes, 1966:961).

The Peer Involvement Hypothesis

The present data clearly support the proposition, "that the greater the personal knowledge of delinquent peers, the more likely the offense will occur" (Silberman, 1976). In fact, when all variables are considered together, peer involvement alone explains the greatest proportion of variation in crime scores in both samples.

The University sample shows a lesser portion of crime scores to be explained by sex and an interaction between sex and peer involvement. In particular, the data suggest males commit significantly more crimes than females; and males who know many criminal friends commit more offenses than females who know many criminals. (Among those who know few criminal friends, no sex differences exist.)

These findings substantiate the previous literature. Nettler observes "the worldwide experience is that young men make higher contributions to crime than do old persons and women" (1974:98). He supports this comment using United States aggregate data which show 59 percent of violent crimes and 79 percent of property offenses are committed by males, the majority under the age of 25. McClintock and Avison (1968) show similar high crime rates for males under 24 years old in England and Wales.

Similarly, the "criminal gang phenomena" (whether middle class or working class) is more a male related activity than female (Thrasher, 1927; Shaw and McKay, 1931; Geis, 1965; Miller, 1966, 1967 to cite but a few such studies). Therefore, it is not surprising to find that the influence of deviant peers has a slightly stronger effect on male criminality in the University sample.

The University respondents also show a significant reduction in crime scores when peer involvement is low and severity is perceived high (see analysis of variance and breakdown tables on pages 99, 111)[14]. In a previous section (see pages 143, 144)we suggest this interaction results from an overestimation of the severity of punishment by individuals who have little contact with law enforcement agencies. Assuming that respondents who have friends arrested for offenses are more informed about the actual severity of penalties, we speculate that those who do not have criminal peers tend to exaggerate the risk factors involved in crime (Zimring and Hawkins, 1973; Morris, 1951; Wilkins, 1964; Tittle and Logan, 1973; Willcock and Stokes, 1968; Claster, 1967). We further propose that with greater exposure to criminal groups respondents would lower

their unrealistic expectations of severe punishment due to the present low rate of detection by legal authorities.

The Grant MacEwan analyses of variance produce results similar to those reported for the University sample[15]. The major difference is that the relationship between sex, peer involvement and crime involvement does not emerge in this community college sample. The relative unimportance of this interaction could be attributed to the sex-age composition of the Grant MacEwan sample. Given that this is an older and female dominated group of students, we propose that the gang phenomena discussed earlier (page 161) is not as prevalent in this sample. It may be that the older Grant MacEwan males live independently from their parents, have families of their own and are employed in addition to attending school. It is also possible that these males are reporting offenses which occurred earlier in their life. Assuming that some of these speculations are true, we suggest that negative peer influence may no longer be as relevant a factor to Grant MacEwan males as their younger University counterparts. Given the construction of the peer involvement question, it is not possible to differentiate between immediate and past peer influences on criminality; however, this time element should be noted as it may be affecting the pattern of responses to the differential-association indicator.

To understand the relevance of the peer-crime findings, we must clarify one possible confounding issue. There has been no attempt in the present study to determine the causal direction of influence. Therefore, we cannot be certain that those who have committed crimes in the past first sought out others who were also so inclined, instead of being behaviorally influenced by membership in a

delinquent group (Reiss and Rhodes, 1961). To quote Eleanor and Sheldon Glueck:

> It should be emphasized that throughout the work in analyzing the data of Unraveling, we insisted on the fundamental importance of sequence in time. That is why we ruled out gang membership (frequently emphasized as a cause of delinquency) and other influences which were found to have occurred long after definite proof of antisocial behavior. The onset of persistent misbehavior tendencies was at the early age of seven or younger among 48 percent of our delinquents, and from eight to ten in an additional 39 percent; thus a total of almost nine-tenths of the entire group showed clear delinquent tendencies before the time when boys generally become members of organized boys gangs.
> (1950:167)

Hirschi and Selvin (1973) agree that the Gluecks' basic argument is valid but claim that their data does not support their conclusions. For example, citing some of the Gluecks' case histories, they show that even at a young age, Gluecks' subjects engaged in delinquent acts accompanied by other delinquent(s) and often older delinquent(s).

This present study does not have data which can determine if a respondent demonstrated anti-social behavior, in general, at the tender age of six or seven. Thus, it cannot be definitely shown that a general lack of morality (or weak socialization) precedes the choosing of one's friends. However, two questions are asked of respondents regarding their criminal involvement: (1) How old were you the first time (you committed a particular offense): and (2) Did you usually do this alone or with a friend?

Table 42 reveals that the majority of offenses occur after the age of 11, and--with the exception of sex with a minor and assault--the offenses are usually

committed in the company of friends.

Albeit weak evidence of time sequence, there is an indication in these data that peer association has some influence on subsequent behavior. For this reason, we feel a feeble argument can be offered to support a differential-association interpretation of the data[16]. By differential-association we refer to Sutherland's explanation of the process by which people become criminal. According to Sutherland, criminal behavior is

> learned through communication in primary social situations which include acquisitions of criminal techniques, motives, drives, rationalizations, attitudes, and which involve all the mechanisms found in any learning situation....individuals are surrounded by persons who both define legal codes as rules to be observed and violated, and that delinquency therefore occurs because individuals have an excess of contacts with criminal patterns and isolation from anti-criminal patterns. Such differential-associations--dependent upon an excess of definitions favorable to violations of the law over definitions unfavorable to violations of law--are learned subject to variation in relation to the prestige and emotional attachment the individual has to the source of criminal or anti-criminal pattern, in the time at which the definitions have been acquired, in the frequency with which the definition is repeated, and in the span of time over which the lesson is reinforced.
>
> (1931:77)

Other empirical studies have also found evidence supporting the differential-association hypothesis (Short, 1960; Voss, 1964; Reiss and Rhodes, 1961). All studies, including the present one, lament the difficulty in operationalizing Sutherland's concepts. Certainly, the present indicator "knowledge of peers arrested/convicted," is a weak test of only one aspect of Sutherland's propositions.

TABLE 42

DISTRIBUTION OF 11 OFFENSES BY AGE OF INITIAL INFRACTION AND PRESENCE OF FRIENDS, UNIVERSITY AND GRANT MACEWAN

	Age Crime Occurred		Accompanied by Friends	
	University	Grant MacEwan	University	Grant MacEwan
	Mean Age	Mean Age	Percentage Answering "Yes" (N)	Percentage Answering "Yes" (N)
Drinking under age	14	14	100 (86)	97 (117)
Drunk and disorderly	16	15	100 (36)	98 (53)
Smoking pot	16	17	100 (56)	97 (81)
Using "hard" drugs	16	16	100 (16)	90 (29)
Vandalism	14	15	95 (20)	82 (18)
Shoplifting	12	11	59 (27)	64 (44)
Theft under	14	13	68 (13)	58 (22)
Theft over	15	17	100 (3)	50 (5)
Joyriding	15	14	100 (5)	100 (8)
Assault	16	18	33 (1)	20 (1)
Sex with minor	17	16	17 (3)	19 (3)

The present study also neglects the learning process by which respondents develop the mechanics of criminal behavior, (Burgess and Akers, 1966; Adams, 1974).

Finally, the argument that criminal involvement affects the choice of friends cannot be denied; and the differential-association interpretation must only be considered a tentative in this study.

Summary and Conclusion

Since the intention of this thesis is to explore the rather complex milieu within which threat of formal punishment operates, it can only be viewed as a preliminary step toward the development of an integrated theory of criminal deterrence.

Seven hypotheses are tested: five deal specifically with the relationship between sanction threats and criminal involvement. One (celerity-crime) is not supported, and four are contingent upon the sample considered, type of offense, influence of other sanction characteristics, credibility of sanction threats, peer affiliations, degree of conformity to legal norms and/or social mores. Of the remaining two propositions, only peer involvement could be considered independently associated with crime involvement in both samples.

This leads us to propose:

(1) That exposure to an excess of criminal learning patterns vis-a-vis involvement with criminal friends increases the amount of crime committed (Sutherland, 1931; Cressey, 1960; Short, 1960; Voss, 1964; Reiss and Rhodes,

1961). This does not preclude the possibility that a proclivity to commit crimes assures greater involvement with criminals (Gluecks, 1950).

Individual assessment of the relative importance of the formal threat of punishment variables (certainty and severity) leads to the following provisional conclusions:

(2) that punishment threats are only conditionally related to crime prevention;

(3) that punishment threats are more effective in reducing crime when respondents are not unduly influenced by subgroup values and lowered expectations of actual punishment due to involvement with criminal friends (Morris, 1951; Cohen, 1955; Miller, 1958; Zimring and Hawkins, 1973; Tittle and Logan, 1973);

(4) that punishment threats are more effective in reducing crime when offenses are of a less serious nature (Andenaes, 1966; Zimring, 1971);

(5) that punishment threats are more effective in reducing crime when informal social pressures are high, as one of the residual effects of formal punishment may be the loss of primary group status, e.g., within the family[17] (Lewin, 1951; Vedder, 1952; Floch, 1964; Willcock and Stokes, 1968; Zimring and Hawkins, 1973);

(6) that certainty of punishment is more effective in reducing crime when severity of punishment is strong (Logan, 1972);

(7) that severity of punishment is more effective in reducing crime when ascribed legitimacy for legal codes vis-a-vis personal conscience is weak (Morris, 1951; Andenaes, 1966; Zimring, 1971); and

(8) that severity of punishment is more effective in reducing crime when certainty of punishment is strong[18] (Gibbs, 1968; Tittle, 1969; Logan, 1972; Gibbs and Erikson, 1973; Attunes and Hunt, 1973).

Although the discussion of officially undetected criminality is only a by-product of the present analysis, there does appear to be some evidence that considerations of credibility may play a rather important role in crime prevention (Logan, 1974). It is therefore posited:

(9) that punishment threats are more effective in reducing crime if credibility is high.

A similar contemplation of moral commitment to existing legal codes suggests:

(10) that strong moral commitment can effectively reduce crime but that other influences may prevail.

(11) Considerable exposure to criminal learning patterns through criminal peer involvement may reduce the effectiveness of moral commitment by threatening to impose group censorship or expulsion (Aronson, 1972; Zimring and Hawkins, 1973).

The above 11 hypotheses are consistent with the results presented for both samples They agree with the conceptions proposed by theorists writing extensively about the strengths and limitations of the general deterrence concept (Andenaes, 1952, 1971, 1975; Zimring, 1971; Zimring and Hawkins, 1973; Logan and Tittle, 1973).

One result peculiar to the University sample also confirms the importance

of the background variable sex. Although no general proposition is offered, it may be that males commit more offenses than females due to their greater exposure and susceptibility to criminal peer involvement (Thrasher, 1927; Shaw and McKay, 1931; Geis, 1965; Miller, 1966, 1967). In addition, there are a number of other interactions only applicable to a particular sample; however, we will not attempt to generalize these findings into specific propositions at this time.

The present study raises a basic issue which must be considered in the future. What value, if any, is there in continuing deterrence research in isolation from other criminogenic explanations?

We advocate more testing of deterrence principles within the context of existing theories of crime. Certainly, our results suggest that formal sanction threats alone do not prevent crime.

In particular, more research is needed to determine the exact role of formal versus informal sanction threats within the socialization process. The failure of the present study to confirm the overwhelming importance of moral commitment (see Silberman, 1976), necessitates further evaluation of this variable.

One weakness of this study is the rather crude testing of the deterrence relationship within the framework of differential-association theory (see pages 8, 39). Considering the strength of the relationship between peer involvement and criminal involvement, we recommend a more complete measurement of Sutherland's propositions. This should include indicators of the frequency, intensity, priority, extent and onset of exposure to delinquent friend(s); measures of subgroup affiliations and loyalties; and a description of the type and

"climate" of illegal activity in the neighbourhood where respondents spent the majority of their youth. In addition, a deliberate effort should be made to determine if peer involvement occurs earlier in time than crime involvement.

Although this is the second attempt to evaluate the role of moral commitment and patterns of differential-association in the deterrence process, the conflicting results of Silberman's and the present study indicate the importance of more integrated research. Other variables may also influence the general deterrence concept. The effects of labeling, subgroup conflict and environmental strains are but a few factors which may reduce the efficacy of punishment threats. The importance of sanctions to the development of social behavior is still not understood, but a preliminary effort has, at least, been made.

FOOTNOTES CHAPTER SIX

[1]All self-report general deterrence studies including the present one used students as respondents and all administered a similar questionnaire. The analytical techniques employed in this study are also comparable to those chosen by Silberman (1976). The Grant MacEwan sample is, however, less reminiscent of the earlier perceived research in that respondents are not undergraduate college students (or high school students) but a more varied sampling of the general population. Considerable differences with respect to age, SES and previous academic background exist among the students enrolled in this community college setting.

[2]Silberman, 1976:457.

[3]Silberman (1976) finds no similar relationship. He does not, however, control for severity in his study. In fact, he discards severity after the variable shows no initial zero order phi correlation with crime involvement. This is done despite prior evidence that severity and certainty may interact to prevent illegal acts (i.e., Gibbs, 1968; Tittle, 1969; Logan, 1972; Gibbs and Erikson, 1973; Attunes and Hunt, 1973).

[4]Willcock and Stokes' youths were given in random order eight cards describing a number of possible consequences of arrest. They were asked to rank them in order of importance. The results are presented below:

RANKING OF EIGHT DETERRENTS BY CONSEQUENCE OF ARREST

		%	Mean Rank
1.	What my family would think about it	49	2.38
2.	The chances of losing my job	22	2.96
3.	Publicity of shame of having to appear in court	12	3.88
4.	The punishment I might get	10	4.40
5.	What my girlfriend would think	6	4.72
6.	Whether I should get fair treatment in court	2	6.07
7.	What my mates would think	1	6.08
8.	What might happen to me between being found out and appearing in court	2	6.20

[5]The following independent variables were entered into the regression: (1) in the University sample - informal peer sanctioning, moral commitment, peer involvement, certainty, severity and sex; and (2) in the Grant MacEwan sample - informal peer and parental sanctioning, moral commitment, peer involvement, certainty, severity and religiosity. These variables were chosen because of their initial significant zero order correlation with crime involvement, (see pages 96, 97 discussing the qualifications for inclusion of variables in the analyses of variance).

[6]It should also be noted that Silberman (1976) does not control for severity of punishment, nor does he include this variable in his analysis of variance.

[7]The University sample has one significant three-way interaction, namely, severity-morality-peer involvement. The Grant MacEwan sample has three significant three-way interactions, namely, severity-morality-religiosity, severity-certainty-religiosity and severity-certainty-morality.

[8]This trend conflicts with Silberman's data. He finds mala prohibita offenses are immune to the threat of punishment. He theorizes "that for laws lacking moral legitimacy (mala prohibita) only socialization acts to prevent crime involvement because the corresponding social support for engaging in these acts, make the threat of punishment an ineffective deterrent" (1976:455).

[9]The Grant MacEwan data does indicate that the general index of certainty of punishment is a slightly better predictor than using specific-offense items. This finding agrees with Silberman's argument.

[10]The only situations which do not show morality to be independently associated with crime involvement in the Grant MacEwan analyses of variance are: (1) when informal parental sanctioning and religiosity are excluded as "factors" or (2) when informal peer and parental sanctioning and religiosity are excluded completely. In this sample there is also reasonable evidence to suggest that in the case of informal peer sanctioning this reduced explanatory power on the part of morality is due to multicollinearity between morality and informal peer sanctioning (see pages 106, 107). To a lesser extent, this could be occurring in the case of informal parental sanctioning and religiosity as these variables are also significantly correlated with morality (rhos of .36, $p < .001$ and .15, $p < .05$, respectively) and all three variables could be theoretically construed as being indicators of a larger socialization variable.

[11]As with the University findings this interaction is only significant when informal peer and parental sanctioning are excluded as "factors" from the analysis of variance.

[12]The University sample has one significant three-way interaction which contains cells of less than ten cases, morality-severity-peer involvement (see pages 111, 112). The significant but unreliable interactions for Grant MacEwan are: morality-peer involvement, morality-certainty-religiosity, morality-severity-religiosity and morality-certainty-severity (see pages

[13]In a Gallup Poll conducted by the Canadian Institute of Public Opinion on Saturday, July 7th, 1973, the following responses were obtained to the question "Do you believe that religion can answer all or most of today's problems--or is it largely old-fashioned and out of date?"

	Religion is the answer	Religion is out of date
18 - 29 years	22%	44%
30 - 39 years	29%	36%
40 - 49 years	32%	28%
50 + years	47%	25%
Males	28%	37%
Females	40%	28%

The same 727 males and females also were asked "Is organized religion a relevant part of your life at the present time or not?" Their answers were as follows:

	Yes	No
18 - 29 years	37%	63%
30 - 39 years	39%	61%
40 - 49 years	52%	48%
50 + years	44%	56%
Males	44%	56%
Females	55%	45%

In a NORC survey conducted by the Roper Public Opinion Research Centre on March, 1974, the following sex differences in church attendance were obtained:

	Never	Less than once per month	One to two times/month	Once/week
Males	15%	37%	21%	27%
Females	11%	32%	23%	34%

The same 1,302 males and females answered as follows to a question on their perception of personal religiosity:

	Strongly Religious	Weakly religious	Not sure
Males	37%	54%	9%
Females	46%	45%	9%

[14]This only occurs when informal peer sanctioning is treated as a "covariate" and sex is a "factor." In addition, there is a rather consistent significant three-way interaction between peer involvement-morality-severity (see page 99), however, the breakdown table on page 102 indicates a cell frequency of under ten cases and the reliability of this finding is questionable.

[15]Two additional two-way interactions are significant, peer involvement-certainty and peer involvement-informal parental sanctions. These associations have been discussed earlier and will not be repeated at this time.

[16]The alternate argument predicted by the general deterrence theory--that punishment of known others for committing a crime or crimes will deter potential offenders from doing so--is not supported by our data. Silberman (1976:455) also rejects this explanation.

[17]This is only a trend for the University sample.

[18]This is only a trend for the University sample.

BIBLIOGRAPHY

Adams, R.
1974 "Differential association and learning principles revisited." Social Problems 20 (Spring):458-471.

Akman, D.
1967 "Homicides and assaults in Canadian prisons." Pp. 161-168 in T. Sellin (ed.), Capital Punishment. New York: Harper and Row.

Andenaes, J.
1952 "General prevention - illusion or reality." Journal of Criminal Law, Criminology, and Police Science 43 (July-August):176-198.

1966 "The general preventive effects of punishment." University of Pennsylvania Law Review 114 (May):949-983.

1968 "Does punishment deter crime?" Criminal Law Quarterly 11:72-84.

1971 "The general preventative effects of punishment." Pp. 74-104 in L. Radzinowica and M. Wolfgang (eds.), Crime and Justice. New York: Basic Books.

1975 "General prevention revisited: research and policy implications." Journal of Criminal Law and Criminology 66 (September):338-365.

Aronson, E.
1972 The Social Animal. San Francisco: W. H. Freeman and Company.

Asch, S.
1951 "Effects of group pressure upon the modification and distortion of judgement." Pp. 117-190 in M. Guetzkow (ed.), Groups, Leadership and Men. Pittsburgh: Carnegie.

1956 "Studies of independence and conformity: a minority of one against a unanimous majority." Psychological Monographs 70: No. 9, Whole No. 416.

Attunes, G. and A. Hunt
1973 "The impact of certainty and severity of punishment on levels of crime in American states: an extended study." Journal of Criminal Law, Criminology and Police Science 64:486-493.

Babbie, E.
1973 Survey Research Methods. Belmont: Wadsworth Publishing.

Bailey, W. L. Gray and D. Martin
1971 "On punishment and crime (Chiricos and Waldo, 1970): some

methodological commentary." Social Problems 19 (Fall):280-284.

and R. Smith
1972 "Punishment: its severity and certainty." Journal of Criminal Law, Criminology and Police Science 63 (December):530-539.

Ball, C.
1955 "The deterrence concept in criminology and law." The Journal of Criminal Law, Criminology and Police Science 46 (September-October):347-354.

Ball, H.
1960 "Social structure and rent control violation." American Journal of Sociology 65:598-604.

Bandura, A.
1969 Principles of behavior modification. New York: Holt, Rhinehart and Winston.

Bankston, W. and J. Cramer
1974 "Toward a macro-sociological interpretation of general deterrence." Criminology 12 (November):251-280.

Bean, F. and R. Cushing
1971 "Criminal homicide, punishment and deterrence: methodological and substantive reconsiderations." Social Science Quarterly 52 (September):269-289.

Becker, H.
1964 Outsiders: Studies in the Sociology of Deviance. Glencoe, Ill.: The Free Press.

Bittner, E.
1967 "The Police on skid-row: a study of peace keeping." Pp. 135-155 in W. Chambliss (ed.), Crime and the Legal Process. San Francisco: McGraw-Hill.

and A. Platt
1966 "The meaning of punishment." Issues in Criminology 2 (Spring): 77-99.

Blalock, H.
1972 Social Statistics. San Francisco: McGraw-Hill.

Blau, P.
1964 Exchange and Power in Social Life. New York: Wiley.

Bloom, B.
1966 "A census tract analysis of socially deviant behaviors." Multivariate Behavioral Research 1 (July):307-320.

Bowers, W.
1968 "Normative constraints on deviant behaviour in the college context." Sociometry 31:370-385.

Boyle, R.
1970 "Path analysis and ordinal data." American Journal of Sociology 75 (January):461-480.

Buikhuisen, W.
1974 "General deterrence: research and theory." Abstracts on Criminology and Penology.

Burgess, R. and R. Akers
1966 "A differential association-reinforcement theory of criminal behaviour." Social Problems 14 (Fall):128-147.

Cameron, M.
1966 The Booster and the Snitch. New York: The Free Press of Glencoe.

Campbell, D. and H. Ross
1968 "The connectjcut crackdown on speeding: time series data in quasi-experimental analysis." Law and Society Review 3 (August):33-53.

Canadian Gallup Poll
1973 Canadian Institute of Public Opinion (July 7).

Chambliss, W.
1966 "The deterrent influence of punishment." Crime and Delinquency 12 (January):70-75.

1967 "Types of deviance and the effectiveness of legal sanctions." Wisconsin Law Review 3 (Summer):703-707.

Chilton, R.
1964 "Delinquency area research in Baltimore, Detroit and Indianapolis," American Sociological Review 29 (February):71-83.

Chiricos, T. and G. Waldo
1970 "Punishment and crime: an examination of some empirical evidence." Social Problems 18 (Fall):201-217.

1972 "Perceived penal sanction and self-reported criminality: a neglected approach to deterrence research." Social Problems 19 (Spring):523-540.

Clark, A. and J. Gibbs
1965 "Social control: a reformulation." Social Problems 12 (Spring): 398-415.

Claster, D.
1967 "Comparison of risk perception between delinquents and non-delinquents." Journal of Criminal Law, Criminology, and Police Science 58 (March):80-86.

Clinard, M.
1942 "The process of urbanization and criminal behavior: a study of culture conflicts." American Journal of Sociology 48 (September): 202-213.

Cohen, A.
1955 Delinquent Boys: The Culture of the Gang. Glencoe, Ill.: The Free Press.

Cohen, A. and J. Short
1968 "Research in delinquent Subcultures." Journal of Social Issues 14: 20-37.

Conover, W.
1971 Practical Nonparametric Statistics. New York: John Wiley and Sons.

Cousineau, D.
1976 General Deterrence and Crime: An Analysis. Unpublished Ph.D. Dissertation: University of Alberta.

Cressey, D.
1960 "Epidemiology and Individual conduct." Pacific Society Review 3 (Fall):47-58.

Dann, R.
1935 "The deterrent effects of capital punishment." Social Science Bulletin 29 (March):1-48.

Dreikers, R.
1964 Children the Challenge. New York: Hawthorn Books.

Dodson, F.
1970 How to Parent. New York: The New American Library.

Ehrlich, Isaac
1972 "The deterrent effect of criminal law enforcement." The Journal of Legal Studies 1 (June):259-276.

1973 "Participation in illegitimate activities: a theoretical and empirical investigation." Journal of Political Economy 81 (May-June):521-565.

1975 "The deterrent effect of capital punishment." American Economic Review 65 (June):397-417.

Erikson, K.
1966 Wayward Puritans: A Study in the Sociology of Deviance. New York: J. Wiley and Sons.

Erikson, M. and L. Empey
1963 "Court records, undetected delinquency and decision-making." Journal of Criminal Law, Criminology and Police Science 54 (December):456-469.

and J. Gibbs
1975 "Specific versus general properties of legal punishments and deterrence." Social Science Quarterly 56 (December):390-397.

Eysenck, H.
1964 Crime and Personality. Boston: Houghton Mufflin Company

Fattah, E.
1977 "Deterrence: a review of the literature." Canadian Journal of Criminology and Corrections 19 (April):1-120.

Floch, M.
1964 "Are prisons outdated." Pp. 10-20 in C. Vedder (ed.), Penology: A Realistic Approach. Illinois: Charles C. Thomas.

Foote, C.
1956 "Vagrancy-type law and its administration." Pp. 295-330 in W. Chambliss (ed.), Crime and the Legal Process. San Francisco: McGraw-Hill.

Geerken, M. and W. Gove
1974 "Systems of deterrence: some theoretical consideration." Unpublished Paper. New York: Department of Sociology, Vanderbilt University.

Geiss, G.
1965 Nonparametric Methods for Quatitative Analysis. New York: Holt, Rinehart and Winston.

Gibbs, J.
1966 "Sanctions." Social Problems 14 (Fall):147-157.

1968 "Crime, punishment and deterrence." Southwestern Social Science Quarterly 48 (March):515-530.

1975 Crime, Punishment and Deterrence. New York: Elsevier.

and K. Erickson
1973 "The deterrence question: some alternative methods of analysis." Social Science Quarterly 54 (December):534-551.

Glueck, S. and E. Glueck
1950 Unraveling Juvenile Delinquency. Cambridge: Harvard University Press.

Goertzel, T.
1972 "Changes in the values of college students, 1958 to 1970-71." Pacific Sociological Review 15 (April):235-244.

Goffman, E.
1963 Behavior in Public Places: Notes on the Social Organization of Gatherings. New York: Free Press of Glencoe.

Goldman, N.
1969 "The differential selection of juvenile offenders for court appearance." Pp. 264-290 in W. Chambliss (ed.), Crime and the Legal Process. New York: McGraw-Hill.

Goode, W.
1972 "Presiential address: the place of force in human society." American Sociological Review 37 (October):507-519.

Gray, L. and J. Martin
1969 "Punishment and deterrence: another analysis of Gibb's data." Social Science Quarterly 50 (September):389-395.

Greenberg, D.
1974 "The incapacitative functions of imprisonment: some estimates." (August) Montreal: A Paper Presented at the Society for the Study of Social Problems.

Hagan, J.
1974 Criminal Justice in a Canadian Province: A Study of the Sentencing Process. Ph.D. Dissertation: University of Alberta.

Hasting, P. and D. Hoge
1976 "Changes in religion among college students 1948 to 1974." Journal for Scientific Study of Religion 15 (3):237-249.

Henshel, R. and S. Carey
1972 "Deviance, deterrence and knowledge of sanctions." Unpublished Paper Presented at the Eastern Sociological Society Meetings.

Hindelang, M.
1973 "Causes of Delinquency: a partial replication and extension." Social Problems 20 (Spring):471-488.

Hirschi, T.
1969 The Causes of Delinquency. Berkeley: University of California Press.

and H. Selvin
1973 Principles of Survey Analysis. New York: The Free Press.

Hodge, R., P. Siegel and P. Rossi
1972 Social Standings of Occupations. New York: Seminar Press.

Homans, G.
1961 Social Behavior: Its Elementary Forms. New York: Harcourt-Brace.

Jeffery, C.
1965 "Criminal behavior and learning theory." Journal of Criminal Law, Criminology and Police Science 56 (September):294-300.

Jensen, G.
1969 "Crime doesn't pay: correlates of a shared misunderstanding." Social Problems 17 (Fall):189-201.

Kobrin, S., E. Hansen, S. Lubeck and R. Yeaman
1972 "The deterrent effectiveness of criminal justice sanction strategies." California: Public Systems Research Institute.

Labovitz, S.
1967 "Some observations of measurement and statistics." Social Forces 46 (December):151-160.

1969 "The nonutility of significance tests: the significance of tests of

significance reconsidered." Pacific Sociological Review 13 (Summer):141-148.

1970 "The assignment of numbers to rank order categories." American Sociological Review 35 (3):515-524.

Lawrence, D. and L. Festinger
1962 Deterrents and Reinforcement. California: Stanford University Press.

Lehman, E.
1974 "Academic discipline and faculty religiosity in secular and church related colleges." Journal for the Scientific Study of Religion 13 (June):205-220.

Lewin, K.
1951 "The psychological situations of reward and punishment." Dynamic Theory of Personality: Selected Papers of Kurt Lewin.

Lindesmith, A.
1957 "Federal law and drug addiction." Pp. 63-74 in W. Chambliss (ed.), Crime and the Legal Process. San Francisco: McGraw-Hill.

Logan, C.
1971 "On punishment and crime (Chiricos and Waldo, 1970): some methodological commentary." Social Problems 19 (Fall):280-284.

1972 "General deterrent effects of imprisonment." Social Forces 51 (September):64-73.

1974 "Arrest vs imprisonment: possible deterrent effects." A Paper Prepared for Presentation at the 69th Annual Meeting of the American Sociological Association.

1975 "Arrest rates and deterrence." Social Science Quarterly 56 (December):376-389.

Mattick, H.
1966 Unexamined Death: An Analysis of Capital Punishment. Centre for Studies in Criminal Justice: University of Chicago.

McClintock, F.
1963 Crimes of Violence. London: MacMillan.

and L. Avison
1968 Crimes in England and Wales. London: Hienemann Educational Books, Ltd.

McLuckie, B., R. Wilson and M. Zahn
1972 "Religion and teenage 'habits'." A Research Report on Drugs.

Milgram, S.
1963 "Behavioral study of obedience." Journal of Abnormal and Social Psychology 67:371-378.

1965. "Some conditions of obedience and disobedience to authority." Human Relations 18:57-76.

Miller, D., A. Rosenthal, D. Miller and S. Ruzek
1968 "Public knowledge of criminal penalties: a research report." Sacraminto: California Assembly Committee on Criminal Procedure (May):10-18.

Miller, W.
1958 "Lower class culture as a generating milieu of gang delinquency." Journal of Social Issues 14 (3):5-19.

1966 "Violent crimes in city gangs." Annals of A.A.P.S.S. 364:96-112.

1967 "Theft behavior in city gangs." Pp. 25-37 in M. Klein (ed.), Juvenile Gangs in Context: Theory, Research and Action. Englewood Cliffs: Prentice-Hall.

Morris, N.
1951 The Habitual Criminal. Wesport: Greenwood Press.

Morris, T.
1957 The Criminal Area: A Study of Social Ecology. London: Routledge and Kegan Paul.

Morris, C. and L. Small
1971 "Changes in conceptions of the good life by American college students from 1950 to 1970." Journal of Personality and Social Psychology 20 (November):254-260.

Murphy, F.
1964 "The incidence of hidden delinquency." American Journal of Orthopsychiatry 16 (October):686-695.

National Data Program for the Social Sciences
1974 Roper Public Opinion Research Centre (March).

Nettler, G.
1974 Explaining Crime. New York: McGraw-Hill

Newman, D.
1969 "Pleading guilty for considerations: a study of bargain justice." Pp. 209-220 in W. Chambliss (ed.), Crime and the Legal Process. San Francisco: McGraw-Hill.

Nie, H., J. Jenkins, K. Steinbrenner and D. Bent
1976 SPSS. New York: McGraw-Hill.

Phillips, L. and H. Votey, Jr.
1972 "An economic analysis of the deterrent effect of law enforcement on criminal activity." The Journal of Criminal Law, Criminology and Police Science 63 (September):330-342.

Pittman, D. and C. Gordon
1958 Revolving Door. New York: The Free Press.

Reckless, W.
1973 The Crime Problem. Fifth Edition. New York: Appleton-Century-Crofts.

Reiss, A., Jr. and A. Rhodes
1961 "The distribution of juvenile delinquency in the social class structure." American Sociological Review 26 (October):720-732.

Rettig, S. and H. Rawson
1963 "The risk hypothesis in predictive judgements of unethical behavior." Journal of Abnormal and Social Psychology 66 (March):243-248.

Robertson, L., R. Rich and H. Ross
1973 "Jail sentences for driving while intoxicated in Chicago: a judicial policy that failed." Law and Society Review 8 (Fall):55-59.

Rosenberg, M.
1968 The Logic of Survey Analysis. New York: Basic Books.

Ross, H. and D. Campbell
1968 "The Connecticut speed crackdown: a study of the effects of legal change." Pp. 103-116 in H. Ross (ed.), Perspectives on the Social Order. New York: McGraw-Hill.

1970 "Determining the social effects of legal reform." American Behavioral Science 13 (March-April):493-497.

Salem, R. and W. Bowers
1970 "Severity of formal sanctions as a deterrent to deviant behavior." Law and Society Review 5 (August):21-40.

Savitz, L.
1958 "A study of capital punishment." Journal of Criminal Law, Criminology and Police Science 49 (November-December):338-344.

Schur, E.
1969 "Reactions to deviance: a critical assessment." American Journal of Sociology 74 (November):309-321.

Schwartz, B.
1968 "The effect in Philadelphia of Pennsylvania's increased penalties for rape and attempted rape." Journal of Criminal Law, Criminology and Police Science 59 (September):509-515.

Schwartz, R. and J. Skolnick
1964 "Two studies of legal stigma." Pp. 103-117 in Howard Becker (ed.), The Other Side. New York: The Free Press.

and S. Orleans
1967 "On legal sanctions." The University of Chicago Law Review 34 (Autumn):274-300.

Schuessler, K.
1969 "The deterrent influence of the death penalty." Pp. 378-388 in W. Chambliss (ed.), Crime and the Legal Process. New York: McGraw-Hill.

and G. Slatin
1964 "Sources of variation in U.S. city crime, 1950, 1960." Journal in Research in Crime and Delinquency 1 (July):127-148.

Sellin, T.
1967a "Homicides in retentionist and abolition states." Pp. 135-138 in T. Sellin (ed.), Capital Punishment. New York: Harper and Row.

1967b "The death penalty and police safety." Pp. 138-154 in T. Sellin (ed.), Capital Punishment. New York: Harper and Row.

1967c "Person homicides." Pp. 154-160 in T. Sellin (ed.), Capital Punishment. New York: Harper and Row.

Shaw, C. and H. McKay
1931 Social Factors in Juvenile Delinquency. National Commission on

Law Observation and Enforcement, (13) Washington: U.S. Government Printing Office.

Short, J.
1960 "Differential-association as a hypothesis." Social Problems 8 (Summer):14-25.

Silberman, M.
1976 "Toward a theory of criminal deterrence." American Sociological Review 41 (June):442-462.

Silver, M.
1974 "Punishment, deterrence and police effectiveness: a survey and critical interpretation of the recent econometric literature." Crime Deterrents and Offender Careers Project. New York: City College.

Simmel, G.
1950 The Sociology of Georg Simmel. Edited and translated by Kurt Wolff. London: Collier-MacMillan.

Sjoquist, David L.
1973 "Property crime and economic behavior: some empirical results." The American Economic Review 63 (June):439-446.

Solomon, R.
1964 "Punishment." American Psychologist 19 (April):239-253.

Sutherland, E.
1931 Principles of Criminology. Philadelphia: Lippincott.

and D. Cressey
1970 Principles of Criminology. Philadelphia: Lippincott.

Sykes, D. and E. Matza
1957 "Techniques of neutralization: a theory of delinquency." American Sociological Review 22:664-70.

Teevan, J.
1972 "Deterrent effects of punishment: the Canadian case." The Journal of Corrections 14 (January):68-82

1974 "Subjective perception of deterrence continued." Unpublished Manuscript: University of Western Ontario.

1976a "Deterrent effects of punishment: subjective measures continued." Canadian Journal of Criminology and Corrections 18 (April):152-161.

1976b "Subjective perception of deterrence (continued)." Journal of Research in Crime and Delinquency 13 (July):155-164.

1977 "Deterrent effects of punishment for breaking and entering and theft." Canadian Journal of Criminology and Corrections 19 (April):121-149.

Thibault, J. and H. Kelly
1972 The Social Psychology of Groups:

Thrasher, F.
1927 The Gang. Chicago: University of Chicago Press.

Tittle, C.
1969 "Crime rates and legal sanctions." Social Problems 16 (Spring): 409-423.

and C. Logan
1973 "Sanctions and deviance: evidence and remaining questions." Law and Society Review 8 (Spring):371-389.

and A. Rowe
1973 "Moral appeal, sanction threat, and deviance: an experimental test." Social Problems 20 (Spring):488-498.

1974 "Certainty of arrest and crime rates: a further test of the deterrence hypothesis." Social Forces 52 (June):455-462.

Trasler, G.
1962 The Explanation of Criminality. London: Routlege and Kegan Paul.

Turk, A.
1964 "Prospects for theories of criminal behavior." Journal of Criminal Law, Criminology and Police Science 55 (December):362-375.

1969 Criminality and the Legal Order. Chicago: Rand McNally.

Vedder, C.
1952 The Juvenile Offender. New York: Doubleday.

Voss, H.
1964 "Differential-association and reported delinquent behavior." Social Problems 12 (Summer):78-85.

Wilkins, L.
1964 Social Deviance: Social Policy, Action and Research. London: Tavistock.

Willcock, A. and T. Stokes
1968 "Deterrents and incentives to crime among youths ages 15-21." Pp. 103 in F. Zimring and J. Hawkins Deterrence. Chicago: The University of Chicago Press.

Wood, L.
1938 "Responsibility and punishment." Journal of Criminal Law, Criminology and Police Science 28 (January-February): 630-640.

Yankelovich, D.
1972 The Changing Values on Campus: Political and Personal Attitudes of Today's College Students. New York: Washington Square Press.

Zimring, F.
1971 Perspectives on Deterrence. Chicago: Public Health Service Publication.

and J. Hawkins
1968 "Deterrence and marginal groups." Journal of Research in Crime and Delinquency 5 (July):100-114.

1973 Deterrence: The Legal Threat in Crime Control. Chicago: University of Chicago Press.

APPENDIX A

THE QUESTIONNAIRE

STUDENT SURVEY

Your class has been selected at random to participate in a survey of students. Your answers will be completely anonymous. Do not put your name on this questionnaire. When you are finished, place the questionnaire at the front of the room so that it may be collected when everyone in the room is finished. Please don't discuss the questionnaire with anyone who has not yet filled out theirs. Please answer all of the questions.

Thank you for your cooperation in our study.

Code Deck 1

1 1

1. Please indicate your opinions about the following actions (circle the answer that fits your opinion best): 2-4

	Always Wrong	Usually Wrong	Sometimes Wrong	Not at all Wrong	No Opinion	
a. Drinking under the legal age	4	3	2	1	0	5
b. Drunk and disorderly	4	3	2	1	0	6
c. Smoking pot	4	3	2	1	0	7
d. Using "hard" drugs	4	3	2	1	0	8
e. Vandalism	4	3	2	1	0	9
f. Shoplifting	4	3	2	1	0	10
g. Theft under $50	4	3	2	1	0	11
h. Theft over $50	4	3	2	1	0	12
i. Joy-riding	4	3	2	1	0	13
j. Assault	4	3	2	1	0	14
k. Sexual intercourse with a minor	4	3	2	1	0	15

16-17

2. If someone like yourself were convicted of committing one of the following offenses, how likely would they be to get the maximum Canadian penalty? (Circle the answer that best fits your opinion.)

		Very Likely	Likely	Unlikely	Very Unlikely	
a.	Drinking under the legal age	4	3	2	1	18
b.	Drunk and disorderly	4	3	2	1	19
c.	Smoking pot	4	3	2	1	20
d.	Using "hard" drugs	4	3	2	1	21
e.	Vandalism	4	3	2	1	22
f.	Shoplifting	4	3	2	1	23
g.	Theft under $50	4	3	2	1	24
h.	Theft over $50	4	3	2	1	25
i.	Joy riding	4	3	2	1	26
j.	Assault	4	3	2	1	27
k.	Sexual intercourse with a minor	4	3	2	1	28

29-30

3. What percentage of the people who commit crimes do you think ever get caught by the police? _____% 31-32

4. Could you estimate the percentage of those caught that are found guilty in court? _____? 33-34

5. If someone like yourself committed one of the following offenses, how likely are the police to catch him (her)?

		Very Likely	Likely	Unlikely	Very Unlikely	
a.	Drinking under the legal age	4	3	3	1	35
b.	Drunk and disorderly	4	3	2	1	36
c.	Smoking pot	4	3	2	1	37
d.	Using "hard" drugs	4	3	2	1	38
e.	Vandalism	4	3	2	1	39
f.	Shoplifting	4	3	2	1	
g.	Theft under $50	4	3	2	1	41
h.	Theft over $50	4	3	2	1	42
i.	Joy-riding	4	3	2	1	43
j.	Assault	4	3	2	1	44
k.	Sexual intercourse with a minor	4	3	2	1	45

46-47

6. Please estimate the amount of time that passes between a Charge (when someone like yourself is caught by the Police) and a Conviction (when someone like yourself is sentenced by the Court) for the following offenses?

Code Deck 2

2-4

	No Delay (Less than 2 months)	Moderate Delay (2-6 mos.)	Long Delay (over 6 mos.)	
a. Drinking under the legal age	3	2	1	5
b. Drunk and disorderly	3	2	1	6
c. Smoking pot	3	2	1	7
d. Using "hard" drugs	3	2	1	8
e. Vandalism	3	2	1	9
f. Shoplifting	3	2	1	10
g. Theft under $50	3	2	1	11
h. Theft over $50	3	2	1	12
i. Joy-riding	3	2	1	13
j. Assault	3	2	1	14
k. Sexual intercourse with a minor	3	2	1	15

7. If someone like yourself committed one of the following offenses, how likely are they to lose the respect of their parents?

		Very Likely	Likely	Unlikely	Very Unlikely	
a.	Drinking under the legal age	4	3	2	1	16
b.	Drunk and disroderly	4	3	2	1	17
c.	Smoking pot	4	3	2	1	18
d.	Using "hard" drugs	4	3	2	1	19
e.	Vandalism	4	3	2	1	20
f.	Shoplifting	4	3	2	1	21
g.	Theft under $50	4	3	2	1	22
h.	Theft over $50	4	3	2	1	23
i.	Joy-riding	4	3	2	1	24
j.	Assault	4	3	2	1	25
k.	Sexual intercourse with a minor	4	3	2	1	26

8. If someone like yourself committed one of the following offenses, how likely are they to lose the respect of their friends?

	Very Likely	Likely	Unlikely	Very Unlikely	
a. Drinking under the legal age	4	3	2	1	27
b. Drunk and disorderly	4	3	2	1	28
c. Smoking pot	4	3	2	1	29
d. Using "hard" drugs	4	3	2	1	30
e. Vandalism	4	3	2	1	31
f. Shoplifting	4	3	2	1	32
g. Theft under $50	4	3	2	1	33
h. Theft over $50	4	3	2	1	34
i. Joy-riding	4	3	2	1	35
j. Assault	4	3	2	1	36
k. Sexual intercourse with a minor	4	3	2	1	37

9. With respect to drinking under age:

a. Did you ever do this:

0. Yes____ 1. No____ (If no, go to part i)

b. How often have you done this?

2. Once____ 3. Occasionally____

4. Frequently____ 38

c. Did you usually do this alone or with a friend(s)?

1. Alone____ 2. Friend(s)____ 39

d. How old were you the first time?

_____ years old 40-41

e. Have you done this in the past two years?

1. Yes____ 2. No____ 42

f. Were you ever arrested by the police for this?

1. Yes____ 2. No____ 43

g. If arrested, were you convicted in court?

1. Yes____ 2. No____ 44

h. If arrested and/or convicted, did you do this again?

1. Yes____ 2. No____ 45

i. Do you know anyone personally who was arrested and/or convicted for this?

1. Yes____ 2. No____ 46

Code 3 Deck 3 1 2- 4

10. With respect to being drunk and disorderly:

a. Did you ever do this?

0. Yes____ 1. No____ (if no, go to part i)

b. How often have you done this?

2. Once____ 3. Occasionally____

4. Frequently____ 5

c. Did you usually do this alone or with a friend(s)?

1. Alone____ 2. Friend(s)____ 6

d. How old were you the first time?

_____ years old 7- 8

e. Have you done this in the past two years?

1. Yes____ 2. No____ 9

f. Were you ever arrested by the police for this?

1 Yes____ 2. No____ 10

g. If arrested were you convicted in court?

1. Yes____ 2. No____ 11

h. If arrested and/or convicted, did you do this again?

1. Yes____ 2. No____ 12

i. Do you know anyone personally who was arrested and/or convicted for this?

1. Yes____ 2. No____ 13

11. With respect to smoking pot:

a. Did you ever do this?

0. Yes____ 1. No____ (if no, go to part i)

b. How often have you done this?

2. Once____ 3. Occasionally____

4. Frequently____ 14

c. Did you usually do this alone or with a friend(s)?

1. Alone____ 2. Friend(s)____ 15

d. How old were you the first time?

_____ years old 16-17

e. Have you done this in the past two years?

1. Yes____ 2. No.____ 18

f. Were you ever arrested by the police for this?

1. Yes____ 2. No____ 19

g. If arrested, were you convicted in court?

1. Yes____ 2. No____ 20

h. If arrested and/or convicted, did you do this again?

1. Yes____ 2. No____ 21

i. Do you know anyone personally who was arrested and/or convicted for this?

1. Yes____ 2. No____ 22

12. With respect to using "hard" drugs:

a. Did you ever do this?

0. Yes____ 1. No____ (if no, go to part i)

b. How often have you done this?

2. Once____ 3. Occasionally____

4. Frequently____ 23

c. Did you usually do this alone or with a friend(s)?

1. Alone____ 2. Friend(s)____ 24

d. How old were you the first time?

_____ years old 25-26

e. Have you done this in the past two years?

1. Yes____ 2. No____ 27

f. Were you ever arrested by the police for this?

1. Yes____ 2. No____ 28

g. If arrested were you convicted in court?

1. Yes____ 2. No____ 29

h. If arrested and/or convicted, did you do this again?

1. Yes____ 2. No____ 30

i. Do you know anyone personally who was arrested and/or convicted for this?

1. Yes____ 2. No____ 31

13. With respect to vandalism:

a. Did you ever do this?

0. Yes____ 1. No____ (if no, go to part i)

b. How often have you done this?

2. Once____ 3. Occasionally____

4. Frequently____ 32

c. Did you usually do this alone or with a friend(s)?

1. Alone____ 2. Friend(s)____ 33

d. How old were you the first time?

_____ years old 34-35

e. Have you done this in the past two years?

1. Yes____ 2. No____ 36

f. Were you ever arrested by the police for this?

1. Yes____ 2. No____ 37

g. If arrested, were you convicted in court?

1. Yes____ 2. No____ 38

h. If arrested and/or convicted, did you do this again?

1. Yes____ 2. No____ 39

i. Do you know anyone personally who was arrested and/or convicted for this?

1. Yes____ 2. No____ 40

14. With respect to shoplifting:

a. Did you ever do this?

0. Yes____ 1. No____ (if no, go to part i)

b. How often have you done this?

2. Once____ 3. Occasionally____

4. Frequently____ 41

c. Did you usually do this alone or with a friend(s)?

1. Alone____ 2. Friend(s)____ 42

d. How old were you the first time?

_____ years old 43-44

e. Have you done this in the past two years?

1. Yes____ 2. No____ 45

f. Were you ever arrested by the police for this?

1. Yes____ 2. No____ 46

g. If arrested were you convicted in court?

1. Yes____ 2. No____ 47

h. If arrested and/or convicted, did you do this again?

1. Yes____ 2. No____ 48

i. Do you know anyone personally who was arrested and/or convicted for this?

1. Yes____ 2. No____ 49

Code 4 | Deck 4 1 2- 4

15. With respect to theft under $50:

a. Did you ever do this?

0. Yes____ 1. No____ (if no, go to part i)

b. How often have you done this?

2. Once____ 3. Occasionally____

4. 4. Frequently____ 5

c. Did you usually do this alone or with a friend(s)?

1. Alone____ 2. Friend(s)____ 6

d. How old were you the first time?

_____ years old 7- 8

e. Have you done this in the past two years?

1. Yes____ 2. No____ 9

f. Were you ever arrested by the police for this?

1. Yes____ 2. No____ 10

g. If arrested, were you convicted in court?

1. Yes____ 2. No____ 11

h. If arrested and/or convicted, did you do this again?

1. Yes____ 2. No____ 12

i. Do you know anyone personally who was arrested and/or convicted for this?

1. Yes____ 2. No____ 13

16. With respect to theft over $50:

a. Did you ever do this?

0. Yes____ 1. No____ (if no, go to part i)

b. How often have you done this?

2. Once____ 3. Occasionally____

4. Frequently____ 14

c. Did you usually do this alone or with a friend(s)?

1. Alone____ 2. Friend(s)____ 15

d. How old were you the first time?

_____ years old 10-17

e. Have you done this in the past two years?

1. Yes____ 2. No____ 18

f. Were you ever arrested by the police for this?

1. Yes____ 2. No____ 19

g. If arrested were you convicted in court?

1. Yes____ 2. No____ 20

h. If arrested and/or convicted, did you do this again?

1. Yes____ 2. No____ 21

i. Do you know anyone personally who was arrested and/or convicted for this?

1. Yes____ 2. No____ 22

17. With respect to joy-riding: (minor auto theft)

a. Did you ever do this?

0. Yes____ 1. No____ (if no, go to part i)

b. How often have you done this?

2. Once____ 3. Occasionally

4. Frequently____ 23

c. Did you usually do this alone or with a friend(s)?

1. Alone____ 2. Friend(s)____ 24

d. How old were you the first time?

_____ years old 25-26

e. Have you done this in the past two years?

1. Yes____ 2. No____ 27

f. Were you ever arrested by the police for this?

1. Yes____ 2. No____ 28

g. If arrested, were you convicted in court?

1. Yes____ 2. No____ 29

h. If arrested and/or convicted, did you do this again?

1. Yes____ 2. No____ 30

i. Do you know anyone personally who was arrested and/or convicted for this?

1. Yes____ 2. No____ 31

18. With respect to assault:

a. Did you ever do this?

0. Yes____ 1. No____ (if no, go to part i)

b. How often have you done this?

2. Once____ 3. Occasionally____

4. Frequently____ 32

c. Did you usually do this alone or with a friend(s)?

1. Alone____ 2. Friend(s)____ 33

d. How old were you the first time?

_____ years old 34-35

e. Have you done this in the past two years?

1. Yes____ 2. No____ 36

f. Were you ever arrested by the police for this?

1. Yes____ 2. No____ 37

g. If arrested were you convicted in court?

1. Yes____ 2. No____ 38

h. If arrested and/or convicted, did you do this again?

1. Yes____ 2. No____ 39

i. Do you know anyone personally who was arrested and/or convicted for this?

1. Yes____ 2. No____ 40

19. With respect to having sexual intercourse with a minor:

a. Did you ever do this?

0. Yes____ 1. No____ (if no, go to part i)

b. How often have you done this?

2. Once____ 3. Occasionally____

4. Frequently____ 41

c. Did you usually do this alone or with a friend(s)?

1. Alone____ 2. Friend(s)____ 42

d. How old were you the first time?

_____ years old 43-44

e. Have you done this in the past two years?

1. Yes____ 2. No____ 45

f. Were you ever arrested by the police for this?

1. Yes____ 2. No____ 46

g. If arrested, were you convicted in court?

1. Yes____ 2. No____ 47

h. If arrested and/or convicted, did you do this again?

1. Yes____ 2. No____ 48

i. Do you know anyone personally who was arrested and/or convicted for this?

1. Yes____ 2. No____ 49

Code Deck 5
5 1
2- 4

20. Sex:

1. M____ 2. F____ 5

21. Age: _____ 6- 7

22. What type of job does (did) your Father do?

_____ 8

23. What type of job does (did) your Mother do?

_____ 9

24. What is your major area of concentration/subject in College?

_____ 10

25. What is your total family income?

1. under $10,000 _____
2. $10,000 - $15,000 _____
3. $15,000 - $20,000 _____
4. $20,000 - $25,000 _____
5. $25,000 - $30,000 _____
6. over $30,000 _____ 11

26. What is the marital status of your parents?

1. Married _____
2. Separated _____
3. Divorced _____
4. Widowed _____
5. Remarried _____ 12

27. If your parents are separated, divorced or windowed, which parent do you live with?

1. Father____ 2. Mother____

3. Neither____ 13

28. If your parents are separated, divorced or windowed, for how long has it been so? _____ years 14-15

29. How many total years of formal education did your father/male guardian complete? _____ years 16-17

30. How many total years of formal education did your mother/female guardian complete? _____ years 18-19

31. How often do you attend religious services?

1. Rarely or never _____
2. Two or three times per year _____
3. Once per month _____
4. Once per week _____
5. Several times per week _____ 20

32. Have you ever been kicked out of school?

1. Yes____ 2. No____ 21

33. What type of job did/do you do prior to your present enrollment in college (if applicable)? 22

APPENDIX B

FREQUENCY DISTRIBUTIONS
PRE-TEST SAMPLE (N = 38)

TABLE 43

DISTRIBUTION OF PERCEIVED CERTAINTY OF PUNISHMENT SCORES FOR 11 OFFENSES, PRE-TEST SAMPLE (N = 38)

	Very Likely			Likely			Unlikely			Very Unlikely		
	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %
Drinking under age	2	5	5	7	18	23	13	34	57	16	43	100
Drunk and disorderly	3	8	8	8	21	29	18	47	76	9	24	100
Smoking pot	5	13	13	11	29	42	14	37	79	8	21	100
Using "hard" drugs	14	37	37	11	29	66	10	26	92	3	8	100
Vandalism	11	29	29	12	32	61	11	29	90	4	10	100
Shoplifting	7	18	18	10	26	44	15	39	83	6	17	100
Theft under	6	16	16	7	18	34	21	55	89	4	11	100
Theft over	9	24	24	15	39	63	11	29	92	3	8	100
Joyriding	4	10	10	9	24	34	17	45	79	8	21	100
Assault	8	21	21	14	37	58	13	34	92	3	8	100
Sex with minor	12	32	32	9	24	56	11	29	85	6	15	100

TABLE 44

DISTRIBUTION OF PERCEIVED SEVERITY OF PUNISHMENT SCORES FOR 11 OFFENSES, PRE-TEST SAMPLE (N = 38)

	Very Likely			Likely			Unlikely			Very Unlikely		
	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %
Drinking under age	3	8	8	4	10	18	13	34	52	18	48	100
Drunk and disorderly	1	3	3	15	39	42	15	39	81	7	19	100
Smoking pot	0	0	0	3	8	8	24	63	71	11	29	100
Using "hard" drugs	1	3	3	12	32	35	16	42	77	9	23	100
Vandalism	3	8	8	18	47	55	11	29	84	6	16	100
Shoplifting	4	10	10	13	34	44	14	37	81	7	19	100
Theft under	3	8	8	14	37	45	17	45	90	4	10	100
Theft over	3	8	8	24	63	71	7	18	90	4	10	100
Joyriding	5	13	13	10	26	39	14	37	76	9	24	100
Assault	7	18	18	17	45	63	8	21	74	6	16	100
Sex with minor	0	0	0	6	16	16	15	39	55	17	45	100

TABLE 45

DISTRIBUTION OF PERCEIVED CELERITY OF PUNISHMENT SCORES FOR 11 OFFENSES, PRE-TEST SAMPLE (N = 38)

	No Delay			Moderate Delay			Long Delay		
	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %
Drinking under age	32	84	84	6	16	100	0	0	100
Drunk and disorderly	29	76	76	9	24	100	0	0	100
Smoking pot	10	26	26	23	60	86	5	14	100
Using "hard" drugs	4	10	10	19	50	60	15	40	100
Vandalism	7	18	18	21	55	73	10	27	100
Shoplifting	19	50	50	16	42	92	3	8	100
Theft under	15	39	39	19	50	89	4	11	100
Theft over	9	24	24	13	34	58	16	42	100
Joyriding	20	53	53	15	39	92	3	8	100
Assault	8	21	21	18	47	68	12	32	100
Sex with minor	12	32	32	11	29	61	15	39	100

TABLE 46

DISTRIBUTION OF MORALITY SCORES FOR 11 OFFENSES
PRE-TEST SAMPLE (N = 38)

	Always Wrong			Usually Wrong			Sometimes Wrong			Never Wrong		
	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %
Drinking under age	3	8	8	9	24	32	22	58	90	4	10	100
Drunk and disorderly	23	61	61	7	18	89	8	21	100	0	0	100
Smoking pot	13	34	34	5	13	47	16	43	90	4	10	100
Using "hard" drugs	28	74	74	4	10	84	6	16	100	0	0	100
Vandalism	32	84	84	6	16	100	0	0	100	0	0	100
Shoplifting	29	76	76	8	21	97	1	3	100	0	0	100
Theft under	30	79	79	5	13	92	3	8	100	0	0	100
Theft over	30	79	79	7	18	97	1	3	100	0	0	100
Joyriding	26	68	68	6	16	84	5	13	97	1	3	100
Assault	28	74	74	8	21	95	2	5	100	0	0	100
Sex with minor	10	26	26	10	26	52	13	34	86	5	14	100

TABLE 47

DISTRIBUTION OF PERCEIVED INFORMAL PARENTAL SANCTIONING SCORES FOR 11 OFFENSES, PRE-TEST SAMPLE (N = 38)

	Very Likely			Likely			Unlikely			Very Unlikely		
	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %
Drinking under age	3	8	8	12	32	40	12	32	72	11	28	100
Drunk and disorderly	3	8	8	11	29	37	12	32	68	12	32	100
Smoking pot	9	24	24	11	29	53	13	34	87	5	13	100
Using "hard" drugs	19	50	50	14	37	87	5	13	100	0	0	100
Vandalism	20	53	53	11	29	82	7	18	100	0	0	100
Shoplifting	15	39	39	11	29	68	12	32	100	0	0	100
Theft under	14	37	37	15	39	76	9	24	100	0	0	100
Theft over	20	53	53	11	29	82	7	18	100	0	0	100
Joyriding	13	34	34	10	26	60	13	34	94	2	6	100
Assault	24	63	63	5	13	76	8	21	97	1	3	100
Sex with minor	21	55	55	8	21	77	4	10	87	5	13	100

TABLE 48

DISTRIBUTION OF PERCEIVED INFORMAL PEER SANCTIONING SCORES FOR 11 OFFENSES, PRE-TEST SAMPLE (N = 38)

	Very Likely			Likely			Unlikely			Very Unlikely		
	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %
Drinking under age	1	3	3	1	3	6	5	13	19	31	81	100
Drunk and disorderly	1	3	3	3	8	11	13	34	45	21	55	100
Smoking pot	4	10	10	2	5	15	12	32	47	20	53	100
Using "hard" drugs	8	21	21	15	39	60	7	18	78	8	22	100
Vandalism	8	21	21	15	39	60	10	26	86	5	14	100
Shoplifting	7	18	18	10	26	44	13	34	78	8	22	100
Theft under	8	21	21	12	32	53	11	29	82	7	18	100
Theft over	9	24	24	14	37	61	11	29	90	4	10	100
Joyriding	4	10	10	4	10	20	19	50	70	11	30	100
Assault	11	29	29	13	34	63	9	24	87	5	13	100
Sex with minor	7	18	18	6	16	34	12	32	66	13	34	100

TABLE 49

DISTRIBUTION OF CRIME INVOLVEMENT SCORES FOR 11 OFFENSES, PRE-TEST SAMPLE (N = 38)

	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %	No.	%	Cumulative %
Drinking under age	37	97	97	1	3	100	1	3	6	13	34	40	23	60	100
Drunk and disorderly	14	37	37	24	63	100	1	3	66	12	32	97	1	3	100
Smoking pot	21	55	55	17	45	100	4	10	55	12	32	87	5	13	100
Using "hard" drugs	7	18	18	31	82	100	1	3	85	6	15	100	0	0	100
Vandalism	6	16	16	32	84	100	4	10	97	2	6	100	0	0	100
Shoplifting	22	58	58	16	42	100	10	26	68	12	32	100	0	0	100
Theft under	15	39	39	23	61	100	10	26	87	5	13	100	0	0	100
Theft over	2	5	5	36	95	100	2	5	100	0	0	100	0	0	100
Joyriding	1	3	3	37	97	100	0	0	97	1	3	100	0	0	100
Assault	2	5	5	36	95	100	1	3	97	1	3	100	0	0	100
Sex with minor	8	21	21	30	79	100	2	5	85	4	10	95	2	5	100

TABLE 50

OCCUPATIONAL LEVELS OF FATHER
PRE-TEST SAMPLE

	Number	Percentage	Cumulative Percentage
Professional	6	16	16
Managerial	3	8	24
Major-Administrative I	0	0	24
Minor-Administrative II	5	13	37
Sales	2	5	42
Clerical	0	0	42
Craftsman / Technical	5	13	55
Farm	5	13	68
Service worker	3	8	76
Transport / Laborer	3	8	84
Armed Forces	1	3	87
Retired	2	5	92
Unknown	3	8	100
Total	38		

TABLE 51

DISTRIBUTION OF FAMILY INCOME
PRE-TEST SAMPLE

	Number	Percentage	Cumulative Percentage
Under $10,000	7	18	18
$10,000 - $25,000	12	32	50
Over $25,000	9	24	74
Unknown	10	26	100
Total	38		

TABLE 52

EDUCATIONAL LEVELS OF FATHER
PRE-TEST SAMPLE

	Number	Percentage	Cumulative Percentage
Under 9 years	14	37	37
9 - 12 years	12	32	69
Completed university under graduate	3	8	77
Graduate degree	3	8	85
Unknown	6	15	100
Total	38		

APPENDIX C

FREQUENCY DISTRIBUTIONS
UNIVERSITY SAMPLE

TABLE 53

DISTRIBUTION OF PERCEIVED CERTAINTY OF PUNISHMENT INDEX
UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Very unlikely	1	1	1	1
Unlikely	2	57	57	58
Likely	3	41	41	99
Very likely	4	1	1	100
Total		99		

TABLE 54

DISTRIBUTION OF PERCEIVED SEVERITY OF
PUNISHMENT INDEX
UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Very unlikely	1	2	2	2
Unlikely	2	42	43	45
Likely	3	52	54	99
Very likely	4	1	1	100
Total		97		

TABLE 55

DISTRIBUTION OF PERCEIVED CELERITY OF PUNISHMENT INDEX
UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Long delay	1	3	3	3
Moderate delay	2	57	58	61
No delay	3	39	39	100
Total		99		

TABLE 56

DISTRIBUTION OF MORALITY INDEX
UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Not at all wrong	1	12	12	12
Sometimes wrong	2	2	2	14
Usually wrong	3	53	54	68
Always wrong	4	32	32	100
Total		99		

TABLE 57

DISTRIBUTION OF PEER INVOLVEMENT INDEX
UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Yes	14	2	2	2
	17	2	2	4
	18	6	6	10
	19	11	11	21
	20	24	24	46
	21	22	22	68
No	22	32	32	100
Total		99		

TABLE 58

DISTRIBUTION OF CRIME INVOLVEMENT INDEX
UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
No crimes committed	11	7	7	7
	13	14	14	21
	14	7	7	28
	15	13	13	41
	16	15	15	57
	17	10	10	68
	18	4	4	71
	19	6	6	77
	20	4	4	81
	21	5	5	86
	22	3	3	89
	23	2	2	71
	24	1	1	92
	25	2	2	94
	26	1	1	95
	27	3	3	98
Many crimes committed	29	1	1	99
	31	1	1	100
Total		99		

TABLE 59

DISTRIBUTION OF INFORMAL PARENTAL SANCTIONING INDEX
UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Very unlikely	1	1	1	1
Unlikely	2	6	6	7
Likely	3	65	65	72
Very likely	4	28	28	100
Total		99		

TABLE 60

DISTRIBUTION OF INFORMAL PEER SANCTIONING INDEX
UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Very unlikely	1	1	1	1
Unlikely	2	40	40	41
Likely	3	53	54	95
Very likely	4	5	5	100
Total		99		

TABLE 61

OCCUPATIONAL LEVELS OF FATHER
UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Lower class occupation	1	34	36	36
Middle class occupation	2	54	57	93
Upper class occupation	3	7	7	100
Total		95		

TABLE 62

DISTRIBUTION OF FAMILY INCOME
UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Under $10,000	1	9	10	10
$10,000 - $15,000	2	9	10	21
$15,000 - $20,000	3	18	21	41
$20,000 - $25,000	4	24	27	68
$25,000 - $30,000	5	15	17	85
Over $30,000	6	13	15	100
Total		88		

TABLE 63

EDUCATIONAL LEVELS OF FATHER
UNIVERSITY SAMPLE

	Number	Percentage	Cumulative Percentage
Under 7 years	15	5	5
7 to 9 years	22	23	28
10 to 12 years	35	38	66
13 to 15 years	16	18	84
Over 15 years	15	16	100
Total	93		

TABLE 64

DISTRIBUTION OF MARITAL STATUS SCORES
UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Married	1	85	89	89
Separated	2	2	2	91
Divorced	3	1	1	92
Widowed	4	6	6	98
Remarried	5	2	2	100
Total		96		

TABLE 65

DISTRIBUTION OF AVERAGE CHURCH ATTENDANCE SCORES
UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Rarely or never	1	46	47	47
Three times a year	2	29	30	77
Once a month	3	6	6	84
Once a week	4	9	9	93
Several times a week	5	7	7	100
Total		97		

TABLE 66

AGE DISTRIBUTION OF UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
19 and under	1	62	62	62
20 - 24	2	33	34	96
25 - 29	3	4	4	100
30 - 34	4	0		100
35 and older	5	0		100
Total		99		

TABLE 67

SEX DISTRIBUTION OF UNIVERSITY SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Male	1	47	48	48
Female	2	51	52	100
Total		98		

APPENDIX D

FREQUENCY DISTRIBUTIONS
GRANT MACEWAN SAMPLE

TABLE 68

DISTRIBUTION OF PERCEIVED CERTAINTY OF PUNISHMENT INDEX
GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Very unlikely	1	14	9	9
Unlikely	2	87	57	66
Likely	3	42	28	94
Very likely	4	9	6	100
Total		152		

TABLE 69

DISTRIBUTION OF PERCEIVED SEVERITY OF PUNISHMENT INDEX
GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Very unlikely	1	19	13	13
Unlikely	2	52	35	48
Likely	3	54	37	85
Very likely	4	23	16	100
Total		148		

TABLE 70

DISTRIBUTION OF PERCEIVED CELERITY OF PUNISHMENT INDEX
GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Long delay	1	6	4	4
Moderate delay	2	89	59	63
No delay	3	55	37	100
Total		150		

TABLE 71

DISTRIBUTION OF MORALITY INDEX
GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Not at all wrong	1	21	14	14
Sometimes wrong	2	1	1	15
Usually wrong	3	63	41	56
Always wrong	4	68	44	100
Total		153		

TABLE 72

DISTRIBUTION OF PEER INVOLVEMENT INDEX
GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Yes	12	1	1	1
	13	2	1	2
	14	1	1	3
	15	1	1	4
	16	3	2	6
	17	3	2	8
	18	13	8	16
	19	17	11	27
	20	18	12	39
	21	22	14	53
	22	72	47	100
No	22	72	47	100
Total		153		

TABLE 73

DISTRIBUTION OF CRIME INVOLVEMENT INDEX
GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
No crimes committed	11	25	16	16
	12	1	.5	17
	13	18	12	29
	14	9	6	35
	15	12	8	43
	16	9	6	48
	17	17	11	60
	18	17	11	71
	19	8	5	76
	20	5	3	79
	21	7	5	84
	22	3	2	86
	23	4	3	88
	24	6	4	92
	25	2	1	93
	26	1	1	94
	27	1	1	95
	28	2	.5	96
	29	1	.5	96
	30	1	.5	97
	32	1	.5	97
Many crimes committed	33	1	.5	98
	34	1	.5	99
	39	1	.5	100
Total		153		

TABLE 74

DISTRIBUTION OF INFORMAL PARENTAL SANCTIONING INDEX
GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Very unlikely	1	3	2	2
Unlikely	2	27	18	20
Likely	3	69	46	66
Very likely	4	51	34	100
Total		150		

TABLE 75

DISTRIBUTION OF INFORMAL PEER SANCTIONING INDEX
GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Very unlikely	1	13	7	7
Unlikely	2	70	46	55
Likely	3	56	37	92
Very likely	4	12	8	100
Total		151		

TABLE 76

OCCUPATIONAL LEVELS OF FATHER
GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Lower class occupation	1	72	50	50
Middle class occupation	2	61	43	93
Upper class occupation	3	10	7	100
Total		143		

TABLE 77

DISTRIBUTION OF FAMILY INCOME
GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Under $10,000	1	25	20	20
$10,000 - $15,000	2	28	22	42
$15,000 - $20,000	3	17	13	55
$20,000 - $25,000	4	25	20	75
$25,000 - $30,000	5	15	12	87
Over $30,000	6	18	14	100
Total		128		

TABLE 78

EDUCATIONAL LEVELS OF FATHER
GRANT MACEWAN SAMPLE

	Number	Percentage	Cumulative Percentage
Under 7 years	11	9	9
7 to 9 years	37	31	40
10 to 12 years	42	35	75
13 to 15 years	14	12	87
Over 15 years	17	13	100
Total	121		

TABLE 79

DISTRIBUTION OF MARITAL STATUS SCORES
GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Married	1	109	77	77
Separated	2	4	3	80
Divorced	3	7	5	85
Widowed	4	16	11	96
Remarried	5	6	4	100
Total		142		

TABLE 80

DISTRIBUTION OF AVERAGE CHURCH ATTENDANCE SCORES
GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Rarely or never	1	70	49	49
Three times a year	2	33	23	72
Once a month	3	11	8	80
Once a week	4	26	18	97
Several times a week	5	4	3	100
Total		144		

TABLE 81

AGE DISTRIBUTION OF GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
19 and under	1	44	29	29
20 - 24	2	66	43	72
25 - 29	3	16	10	82
30 - 34	4	11	8	90
35 and older	5	16	10	100
Total		153		

TABLE 82

SEX DISTRIBUTION OF GRANT MACEWAN SAMPLE

	Score	Number	Percentage	Cumulative Percentage
Male	1	51	33	33
Female	2	102	67	100
Total		153		

APPENDIX E

ANALYSES OF VARIANCE
UNIVERSITY SAMPLE

TABLE 83

UNIVERSITY ANALYSIS OF VARIANCE #1: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, PERCEIVED CERTAINTY AND PERCEIVED SEVERITY
(Unequal n's)

Source	Sum of Squares	D. F.	Mean Sum of Squares	F	Significance of F
Peer involvement	123.801	1	123.801	10.759	.002
Morality	79.289	1	79.289	6.891	.010
Certainty	.006	1	.006	.001	.981
Severity	6.770	1	6.770	.588	.445
Peer involvement x morality	5.856	1	5.856	.509	.478
Peer involvement x certainty	9.631	1	9.631	.837	.363
Peer involvement x severity	26.942	1	26.942	2.342	.130
Morality x certainty	25.358	1	25.358	2.204	.142
Morality x severity	44.191	1	44.191	3.841	.053
Certainty x severity	36.403	1	36.403	3.164	.079
Peer involvement x morality x certainty	6.105	1	6.105	.531	.468
Peer involvement x morality x severity	26.984	1	26.984	2.345	.130
Peer involvement x certainty x severity	1.131	1	1.131	.098	.755
Morality x certainty x severity	30.363	1	30.363	2.639	.108
Explained	834.092	14	59.578	5.178	.000
Residual	943.527	82	11.506		
Total	1777.619	96	18.517		

TABLE 84

UNIVERSITY ANALYSIS OF VARIANCE #2: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, SEX, PERCEIVED SEVERITY AND INFORMAL PEER SANCTIONING WITH PERCEIVED CERTAINTY AS A COVARIATE
(Unequal n's)

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Covariates					
Certainty	.689	1	.689	.072	.789
Main Effects					
Peer involvement	124.246	1	124.246	12.976	.001
Morality	13.244	1	13.244	1.383	.244
Sex	37.465	1	37.465	3.913	.052
Peer sanctions	3.545	1	3.545	.370	.545
Severity	4.294	1	4.294	.448	.505
2-Way Interactions					
Peer involvement x sex	49.888	1	49.888	5.210	.026
Peer involvement x morality	7.840	1	7.840	.819	.369
Peer involvement x peer sanctions	.058	1	.058	.006	.938
Peer involvement x severity	10.834	1	10.834	1.131	.291
Sex x morality	.327	1	.327	.034	.854
Sex x peer sanctions	.082	1	.082	.009	.926
Sex x severity	4.962	1	4.962	.518	.474
Morality x peer sanctions	.005	1	.005	.001	.982
Morality x severity	6.944	1	6.944	.725	.397
Peer sanctions x severity	2.974	1	2.974	.311	.579

TABLE 84: continued

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
3-Way Interactions					
Peer involvement x sex x morality	20.485	1	20.485	2.139	.148
Peer involvement x sex x severity	1.364	1	1.364	.142	.707
Peer involvement x sex x peer sanctions	1.565	1	1.565	.163	.687
Peer involvement x morality x peer sanctions	6.594	1	6.594	.689	.409
Peer involvement x morality x severity	36.941	1	36.941	3.858	.054
Peer involvement x peer sanctions x severity	.022	1	.022	.002	.962
Sex x morality x peer sanctions	.095	1	.095	.010	.921
Sex x morality x severity	2.865	1	2.865	.299	.586
Sex x peer sanctions x severity	9.584	1	9.584	1.001	.321
Morality x peer sanctions x severity	11.794	1	11.794	1.232	.271
Explained	1081.303	26	41.589	4.343	
Residual	660.687	69	9.575		
Total	1741.990	95	18.337		

TABLE 85

UNIVERSITY ANALYSIS OF VARIANCE #3: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, SEX, PERCEIVED CERTAINTY AND INFORMAL PEER SANCTIONING WITH PERCEIVED SEVERITY AS A COVARIATE
(Unequal n's)

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Covariates					
Severity	10.349	1	10.349	1.118	.294
Main Effects					
Peer involvement	301.431	1	301.431		
Morality	24.211	1	24.211	2.616	.110
Sex	68.743	1	68.743	7.429	.008
Peer sanctions	9.746	1	9.746	1.053	.308
Certainty	43.420	1	43.420	4.692	.034
2-Way Interactions					
Peer involvement x morality	32.778	1	32.778	3.542	.064
Peer involvement x sex	40.430	1	40.430	4.369	.040
Peer involvement x peer sanctions	.060	1	.060	.006	.936
Peer involvement x certainty	.932	1	.932	.101	.752
Morality x sex	11.901	1	11.901	1.286	.261
Morality x peer sanctions	8.229	1	8.229	.889	.349
Morality x certainty	9.633	1	9.633	1.041	.311
Sex x peer sanctions	.349	1	.349	.038	.847
Sex x certainty	10.611	1	10.611	1.147	.288
Peer sanctions by certainty	17.240	1	17.240	1.863	.177

TABLE 85: continued

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
3-Way Interactions					
Peer involvement x morality x sex	10.914	1	10.914	1.179	.281
Peer involvement x morality x peer sanctions	8.601	1	8.601	.929	.338
Peer involvement x morality x certainty	1.888	1	1.888	.204	.653
Peer involvement x sex x peer sanctions	8.121	1	8.121	.878	.352
Peer involvement x sex x certainty	7.708	1	7.708	.833	.365
Peer involvement x peer sanctions x certainty	13.188	1	13.188	1.425	.237
Morality x sex x peer sanctions	1.146	1	1.146	.124	.726
Morality x sex x certainty	13.645	1	13.645	1.475	.229
Morality x peer sanctions x certainty	5.894	1	5.894	.637	.428
Sex x peer sanctions x certainty	21.255	1	21.255	2.297	.134
Explained	1103.497	26	42.442	4.587	
Residual	638.493	69	9.254		
Total	1741.990	95	18.337		

TABLE 86

UNIVERSITY ANALYSIS OF VARIANCE #4: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, SEX, PERCEIVED CERTAINTY AND PERCEIVED SEVERITY WITH INFORMAL PEER SANCTIONING AS A COVARIATE
(Unequal n's)

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Covariates					
Peer sanctions	16.651	1	16.651	1.918	.171
Main Effects					
Peer involvement	76.796	1	76.796	8.846	.004
Morality	15.034	1	15.034	1.732	.193
Sex	38.567	1	38.567	4.442	.039
Certainty	.673	1	.673	.077	.782
Severity	.216	1	.216	.025	.875
2-Way Interactions					
Peer involvement x morality	8.117	1	8.117	.935	.337
Peer involvement x sex	59.935	1	59.935	6.904	.011
Peer involvement x certainty	11.472	1	11.472	1.321	.254
Peer involvement x severity	32.563	1	32.563	3.751	.057
Morality x sex	.004	1	.004	.001	.982
Morality x certainty	13.038	1	13.038	1.502	.225
Morality x severity	22.788	1	22.788	2.625	.110
Sex x certainty	.794	1	.794	.091	.763
Sex x severity	.019	1	.019	.002	.963
Certainty x severity	1.261	1	1.261	.145	.704

TABLE 86: continued

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
3-Way Interactions					
Peer involvement x morality x sex	23.123	1	23.123	2.663	.107
Peer involvement x morality x certainty	15.644	1	15.644	1.802	.184
Peer involvement x morality x severity	41.937	1	41.937	4.831	.031
Peer involvement x sex x certainty	4.507	1	4.507	.519	.474
Peer involvement x sex x severity	3.880	1	3.880	.447	.506
Peer involvement x certainty x severity	6.825	1	6.825	.786	.378
Morality x sex x certainty	4.751	1	4.751	.547	.462
Morality x sex x severity	21.003	1	21.003	2.419	.124
Morality x certainty x severity	.925	1	.925	.106	.745
Sex x certainty x severity	12.451	1	12.451	1.434	.235
Explained	1142.963	26	43.960	5.064	
Residual	599.026	69	8.682		
Total	1741.990	95	18.337		

APPENDIX F

ANALYSES OF VARIANCE
GRANT MACEWAN SAMPLE

TABLE 87

GRANT MACEWAN ANALYSIS OF VARIANCE #1: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, PERCEIVED CERTAINTY & PERCEIVED SEVERITY
(Unequal n's)

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Morality	41.942	1	41.942	2.586	.110
Peer involvement	446.643	1	446.643	27.54	.001
Severity	.713	1	.713	.044	.834
Certainty	20.650	1	20.650	1.273	.261
Morality x peer involvement	1.134	1	1.134	.070	.792
Morality x severity	39.669	1	39.669	2.446	.120
Morality x certainty	1.164	1	1.164	.072	.789
Peer involvement x severity	4.852	1	4.852	.299	.585
Peer involvement x certainty	1.724	1	1.724	.106	.745
Severity x certainty	.023	1	.023	.001	.970
Morality x peer involvement x severity	1.595	1	1.595	.098	.754
Morality x peer involvement x certainty	8.470	1	8.470	.522	.471
Morality x severity x certainty	6.309	1	6.309	.389	.534
Peer involvement x severity x certainty	.125	1	.125	.008	.930
Morality x peer involvement x severity x certainty	28.289	1	28.287	1.744	.189
Explained	1938.108	15	129.207	7.967	
Residual	2124.545	131	16.218		
Total	4062.653	146	27.826		

TABLE 88

GRANT MACEWAN ANALYSIS OF VARIANCE #2: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, PERCEIVED CERTAINTY, PERCEIVED SEVERITY AND RELIGIOSITY WITH INFORMAL PARENTAL AND PEER SANCTIONING AS COVARIATES
(Unequal n's)

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Covariates					
Peer sanctions	219.802	1	219.802	17.124	.001
Parental sanctions	87.427	1	87.427	6.811	.010
Main Effects					
Morality	106.554	1	106.554	8.301	.005
Peer involvement	85.668	1	85.668	6.674	.011
Certainty	1.994	1	1.994	.155	.694
Severity	22.732	1	22.732	1.771	.186
Religiosity	47.707	1	47.707	3.717	.067
2-Way Interactions					
Morality x peer involvement	.016	1	.016	.001	.972
Morality x certainty	5.808	1	5.808	.453	.503
Morality x severity	53.661	1	53.661	4.181	.043
Morality x religiosity	53.152	1	53.152	4.141	.044
Peer involvement x certainty	5.214	1	5.214	.406	.525
Peer involvement x severity	9.349	1	9.349	.728	.395
Peer involvement x religiosity	40.132	1	40.132	3.127	.080
Certainty x severity	11.646	1	11.646	.907	.343
Certainty x religiosity	4.953	1	4.953	.386	.536
Severity x religiosity	25.258	1	25.258	1.968	.164

TABLE 88: continued

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
3-Way Interactions					
Morality x peer involvement x certainty	1.604	1	1.604	.125	.724
Morality x peer involvement x severity	1.405	1	1.405	.109	.741
Morality x peer involvement x religiosity	93.501	1	93.501	7.284	.008
Morality x certainty x severity	27.631	1	27.631	2.153	.145
Morality x certainty x religiosity	105.253	1	105.253	8.200	.005
Morality x severity x religiosity	54.309	1	54.309	4.231	.042
Peer involvement x certainty x severity	1.174	1	1.174	.091	.763
Peer involvement x certainty x religiosity	.361	1	.361	.028	.867
Peer involvement x severity x religiosity	20.710	1	20.710	1.613	.207
Certainty x severity x religiosity	264.646	1	264.646	20.618	.001
Explained	2409.087	27	89.225	6.951	
Residual	1373.447	107	12.836		
Total	3782.534	134	28.228		

TABLE 89

GRANT MACEWAN ANALYSIS OF VARIANCE #3: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, PERCEIVED CERTAINTY, PERCEIVED SEVERITY AND INFORMAL PARENTAL SANCTIONING WITH INFORMAL PEER SANCTIONING AND RELIGIOSITY AS COVARIATES
(Unequal n's)

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Covariates					
Peer sanctions	205.381	1	205.381	13.954	.001
Religiosity	6.191	1	6.191	.421	.518
Main Effects					
Morality	186.566	1	186.566	12.675	.001
Peer involvement	164.290	1	164.290	11.162	.001
Certainty	.640	1	.640	.043	.835
Severity	4.328	1	4.328	.294	.589
Parental sanctions	7.663	1	7.663	.521	.472
2-Way Interactions					
Morality x peer involvement	3.633	1	3.633	.247	.620
Morality x certainty	11.086	1	11.086	.753	.387
Morality x severity	.274	1	.274	.019	.892
Morality x parental sanctions	.113	1	.113	.008	.930
Peer involvement x certainty	58.749	1	58.749	3.991	.048
Peer involvement x severity	94.661	1	94.661	6.431	.013
Peer involvement x parental sanctions	58.920	1	58.920	4.003	.048
Certainty x severity	33.018	1	33.018	2.243	.137
Certainty x parental sanctions	80.358	1	80.358	5.460	.021
Severity x parental sanctions	11.788	1	11.788	.801	.373

TABLE 89: continued

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
3-Way Interactions					
Morality x peer involvement x certainty	17.397	1	17.397	1.182	.279
Morality x peer involvement x severity	18.640	1	18.640	1.266	.263
Morality x peer involvement x parental sanctions	32.410	1	32.410	2.202	.141
Morality x certainty x severity	63.637	1	63.637	4.323	.040
Morality x certainty x parental sanctions	2.821	1	2.821	.192	.662
Morality x severity x parental sanctions	25.765	1	25.765	1.750	.189
Peer involvement x certainty x severity	3.852	1	3.852	.262	.610
Peer involvement x certainty x parental sanctions	42.339	1	42.339	2.877	.093
Peer involvement x severity x parental sanctions	36.038	1	36.038	2.448	.121
Certainty x severity x parental sanctions	10.522	1	10.522	.715	.400
Explained	2207.613	27	81.763	5.555	
Residual	1574.921	107	14.719		
Total	3782.534	134	28.228		

TABLE 90

GRANT MACEWAN ANALYSIS OF VARIANCE #4: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, PERCEIVED CERTAINTY, PERCEIVED SEVERITY AND INFORMAL PEER SANCTIONING WITH INFORMAL PARENTAL SANCTIONING AND RELIGIOSITY AS COVARIATES
(Unequal n's)

Source	Sum of Squares	D.F.	Means Sum of Squares	F	Significance of F
Covariates					
Parental sanctions	3.462	1	3.462	.209	.648
Religiosity	1.827	1	1.827	.110	.740
Main Effects					
Morality	58.177	1	58.177	3.515	.064
Peer involvement	185.135	1	185.135	11.185	.001
Certainty	1.229	1	1.229	.074	.786
Severity	8.412	1	8.412	.508	.477
Peer sanctions	58.514	1	58.514	3.535	.063
2-Way Interactions					
Morality x Peer involvement	24.690	1	24.690	1.492	.225
Morality x certainty	17.539	1	17.539	1.060	.306
Morality x severity	2.892	1	2.892	.175	.677
Morality x peer sanctions	8.110	1	8.110	.490	.485
Peer involvement x certainty	9.008	1	9.008	.544	.462
Peer involvement x severity	25.905	1	25.905	1.565	.214
Peer involvement x peer sanctions	.106	1	.106	.006	.936
Certainty x severity	16.206	1	16.206	.979	.325
Certainty x peer sanctions	.936	1	.936	.057	.813
Severity x peer sanctions	.696	1	.696	.042	.838

TABLE 90: continued

Source	Sum of Squares	D.F.	Means Sum of Squares	F	Significance of F
3-Way Interactions					
Morality x peer involvement x certainty	4.892	1	4.892	.296	.588
Morality x peer involvement x severity	25.874	1	25.874	1.563	.214
Morality x peer involvement x peer sanctions	1.905	1	1.905	.115	.735
Morality x certainty x severity	24.933	1	24.933	1.506	.222
Morality x certainty x peer sanctions	5.833	1	5.833	.352	.554
Morality x severity x peer sanctions	.858	1	.858	.052	.820
Peer involvement x certainty x severity	25.659	1	25.659	1.550	.216
Peer involvement x certainty x peer sanctions	12.346	1	12.346	.746	.390
Peer involvement x severity x peer sanctions	.189	1	.189	.011	.915
Certainty x severity x peer sanctions	3.482	1	3.482	.210	.647
Explained	2011.433	27	74.498	4.501	
Residual	1771.101	107	16.552		
Total	3782.534	134	28.228		

TABLE 91

GRANT MACEWAN ANALYSIS OF VARIANCE #5: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, INFORMAL PARENTAL AND PEER SANCTIONING AND RELIGIOSITY WITH PERCEIVED CERTAINTY AND PERCEIVED SEVERITY AS COVARIATES
(Unequal n's)

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Covariates					
Certainty	34.260	1	34.260	2.135	.147
Severity	.483	1	.483	.030	.863
Main Effects					
Morality	76.047	1	76.047	4.738	.032
Peer involvement	303.943	1	303.943	18.937	.001
Peer sanctions	53.119	1	53.119	3.310	.072
Parental sanctions	5.587	1	5.587	.348	.557
Religiosity	2.397	1	2.397	.149	.700
2-Way Interactions					
Morality x peer involvement					
Morality x peer sanctions	.129	1	.129	.008	.929
Morality x parental sanctions	2.935	1	2.935	.183	.670
Morality x religiosity	1.109	1	1.109	.069	.793
Peer involvement x peer sanctions	31.760	1	31.760	1.979	.163
Peer involvement x parental sanctions	.468	1	.468	.029	.865
Peer involvement x religiosity	.917	1	.917	.057	.812
Peer sanctions x parental sanctions	17.863	1	17.863	1.113	.294

TABLE 91: continued

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Signi-ficance of F
Peer sanctions x religiosity	11.967	1	11.967	.746	.390
Parental sanctions x religiosity	.785	1	.785	.049	.825
3-Way Interactions					
Morality x peer involvement x peer sanctions	.024	1	.024	.001	.969
Morality x peer involvement x parental sanctions	.800	1	.800	.050	.824
Morality x peer involvement x religiosity	22.903	1	22.903	1.427	.235
Morality x peer sanctions x parental sanctions	1.034	1	1.034	.064	.800
Morality x peer sanctions x religiosity	.116	1	.116	.007	.933
Morality x parental sanctions x religiosity	14.240	1	14.240	.887	.348
Peer involvement x peer sanctions x parental sanctions	41.478	1	41.478	2.584	.111
Peer involvement x peer sanctions x religiosity	4.478	1	4.478	.279	.598
Peer involvement x parental sanctions x religiosity	5.571	1	5.571	.347	.557
Peer sanctions x parental sanctions					

TABLE 91: continued

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
x religiosity	5.633	1	5.633	.351	.555
Explained	2145.452	32	67.045	4.177	
Residual	1637.082	102	16.050		
Total	3782.534	134	28.228		

APPENDIX G

ANALYSES OF VARIANCE
GRANT MACEWAN SAMPLE OMITTING 21 CASES

TABLE 92

GRANT MACEWAN ANALYSIS OF VARIANCE #2A: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, PERCEIVED CERTAINTY, PERCEIVED SEVERITY AND RELIGIOSITY WITH INFORMAL PARENTAL AND PEER SANCTIONING AS COVARIATES
(Unequal n's)

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Covariates					
Peer sanctions	120.120	1	120.120	9.012	.003
Parental sanctions	7.657	1	7.657	.574	.450
Main Effects					
Morality	96.461	1	96.461	7.237	.008
Peer involvement	168.115	1	168.115	12.612	.001
Certainty	.098	1	.098	.007	.932
Severity	6.708	1	6.708	.503	.480
Religiosity	23.393	1	23.393	1.755	.188
2-Way Interactions					
Morality x peer involvement	3.605	1	3.605	.270	.604
Morality x certainty	16.700	1	16.700	1.253	.266
Morality x severity	155.171	1	155.171	11.641	.001
Morality x religiosity	42.722	1	42.722	3.205	.076
Peer involvement x certainty	9.537	1	9.537	.715	.400
Peer involvement x severity	3.519	1	3.519	.264	.609
Peer involvement x religiosity	23.754	1	23.754	1.782	.185
Certainty x severity	116.763	1	116.763	8.760	.004
Certainty x religiosity	3.116	1	3.116	.234	.630

TABLE 92: continued

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Severity x religiosity	10.432	1	10.432	.783	.378
3-Way Interactions					
Morality x peer involvement x certainty	26.090	1	26.090	1.957	.165
Morality x peer involvement x severity	6.286	1	6.286	.472	.494
Morality x peer involvement x religiosity	94.388	1	94.388	7.081	.009
Morality x certainty x severity	11.028	1	11.028	.827	.365
Morality x certainty x religiosity	90.760	1	90.760	6.809	.010
Morality x severity x religiosity	107.214	1	107.214	8.043	.006
Peer involvement x certainty x severity	.122	1	.122	.009	.924
Peer involvement x certainty x religiosity	4.993	1	4.993	.375	.542
Peer involvement x severity x religiosity	3.770	1	3.770	.283	.596
Certainty x severity x religiosity	195.557	1	195.557	14.671	.001
Explained	2372.003	27	87.852	6.591	
Residual	1332.953	100	13.330		
Total	3704.957	127	29.173		

TABLE 93

GRANT MACEWAN ANALYSIS OF VARIANCE #3A: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, PERCEIVED CERTAINTY, PERCEIVED SEVERITY AND INFORMAL PARENTAL SANCTIONING WITH INFORMAL PEER SANCTIONING AND RELIGIOSITY AS COVARIATES
(Unequal n's)

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Signi-ficance of F
Covariates					
Religiosity	14.435	1	14.435	.922	.339
Peer sanctions	113.739	1	113.739	7.265	.008
Main Effects					
Morality	143.853	1	143.853	9.189	.003
Parental sanctions	1.625	1	1.625	.104	.748
Peer involvement	53.564	1	53.564	3.422	.068
Certainty	.681	1	.681	.044	.835
Severity	5.802	1	5.802	.371	.544
2-Way Interactions					
Morality x parental sanctions	1.012	1	1.012	.065	.800
Morality x peer involvement	13.049	1	13.049	.834	.364
Morality x certainty	1.517	1	1.517	.097	.756
Morality x severity	16.312	1	16.312	1.042	.310
Parental sanctions x peer involvement	13.355	1	13.355	.853	.358
Parental sanctions x certainty	17.063	1	17.063	1.090	.299
Parental sanctions x severity	8.556	1	8.556	.547	.462
Peer involvement x certainty	20.572	1	20.572	1.314	.255

TABLE 93: continued

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Peer involvement x severity	51.330	1	51.330	3.279	.073
Certainty x severity	.275	1	.275	.018	.895
3-Way Interactions					
Morality x parental sanctions x peer involvement	25.521	1	25.521	1.630	.205
Morality x parental sanctions x certainty	3.692	1	3.692	.236	.628
Morality x parental sanctions x severity	17.902	1	17.902	1.144	.288
Morality x peer involvement x certainty	.695	1	.695	.044	.834
Morality x peer involvement x severity	.270	1	.270	.017	.896
Morality x certainty x severity	54.000	1	54.000	3.449	.066
Parental sanctions x peer involvement x certainty	3.843	1	3.843	.246	.621
Parental sanctions x peer involvement x severity	8.311	1	8.311	.531	.468
Parental sanctions x certainty x severity	9.410	1	9.410	.601	.440
Peer involvement x certainty x severity	.309	1	.309	.020	.889

TABLE 93: continued

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Explained	2040.106	27	75.559	4.827	
Residual	1440.248	92	15.655		
Total	3480.354	119	29.247		

TABLE 94

GRANT MACEWAN ANALYSIS OF VARIANCE #4A: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, PERCEIVED CERTAINTY, PERCEIVED SEVERITY, INFORMAL PEER SANCTIONING WITH INFORMAL PARENTAL SANCTIONING AND RELIGIOSITY AS COVARIATES
(Unequal n's)

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Covariates					
Parental sanctions	.012	1	.012	.001	.979
Religiosity	3.311	1	3.311	.201	.655
Main Effects					
Morality	54.521	1	54.521	3.303	.072
Peer sanctions	1.620	1	1.620	.098	.755
Peer involvement	99.690	1	99.690	6.039	.016
Severity	28.702	1	28.702	1.739	.191
Certainty	6.483	1	6.483	.393	.532
2-Way Interactions					
Morality x peer sanctions	3.525	1	3.525	.214	.645
Morality x peer involvement	11.816	1	11.816	.716	.400
Morality x severity	20.543	1	20.543	1.244	.268
Morality x certainty	.064	1	.064	.004	.950
Peer sanctions x peer involvement	.005	1	.005	.000	.987
Peer sanctions x severity	11.563	1	11.563	.700	.405
Peer sanctions x certainty	6.398	1	6.398	.388	.535
Peer involvement x severity	9.932	1	9.932	.602	.440
Peer involvement x certainty	.021	1	.021	.001	.972
Severity x certainty	10.680	1	10.680	.647	.423

TABLE 94: continued

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
3-Way Interactions					
Morality x peer sanctions x peer involvement	1.817	1	1.817	.110	.741
Morality x peer sanctions x severity	4.447	1	4.447	.269	.605
Morality x peer sanctions x certainty	.014	1	.014	.001	.977
Morality x peer involvement x severity	1.197	1	1.197	.072	.788
Morality x peer involvement x certainty	.313	1	.313	.019	.891
Morality x severity x certainty	37.402	1	37.402	2.266	.136
Peer sanctions x peer involvement x severity	14.308	1	14.308	.867	.354
Peer sanctions x peer involvement x certainty	16.398	1	16.398	.993	.322
Peer sanctions x severity x certainty	3.175	1	3.175	.192	.662
Peer involvement x severity x certainty	2.347	1	2.347	.142	.707
Explained	1961.565	27	72.651	4.401	
Residual	1518.789	92	16.509		
Total	3480.354	119	29.247		

TABLE 95

GRANT MACEWAN ANALYSIS OF VARIANCE #5A: CRIME INVOLVEMENT BY PEER INVOLVEMENT, PERCEIVED MORALITY, INFORMAL PARENTAL AND PEER SANCTIONING AND RELIGIOSITY WITH PERCEIVED CERTAINTY AND PERCEIVED SEVERITY AS COVARIATES
(Unequal n's)

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Covariates					
Certainty	3.704	1	3.704	.228	.634
Severity	.064	1	.064	.004	.950
Main Effects					
Morality	151.875	1	151.875	9.367	.003
Religiosity	2.059	1	2.059	.127	.722
Peer sanctions	77.078	1	77.078	4.754	.032
Parental sanctions	6.495	1	6.495	.401	.528
Peer involvement	65.481	1	65.481	4.039	.047
2-Way Interactions					
Morality x religiosity	54.500	1	54.500	3.361	.070
Morality x peer sanctions	3.609	1	3.609	.223	.638
Morality x parental sanctions	41.005	1	41.005	2.529	.115
Morality x peer involvement	9.868	1	9.868	.609	.437
Religiosity x peer sanctions	1.515	1	1.515	.093	.761
Religiosity x parental sanctions	13.525	1	13.525	.834	.363
Religiosity x peer involvement	23.444	1	23.444	1.446	.232
Peer sanctions x parental sanctions	28.701	1	28.701	1.770	.187
Peer sanctions x peer involvement	6.379	1	6.379	.393	.532

TABLE 95: continued

Source	Sum of Squares	D.F.	Mean Sum of Squares	F	Significance of F
Parental sanctions x peer involvement	23.623	1	23.623	1.457	.230
3-Way Interactions					
Morality x religiosity x peer sanctions	7.518	1	7.518	.464	.498
Morality x religiosity x parental sanctions	39.389	1	39.389	2.429	.122
Morality x religiosity x peer involvement	.844	1	.844	.052	.820
Morality x peer sanctions x parental sanctions	15.649	1	15.649	.965	.328
Morality x peer sanctions x peer involvement	4.316	1	4.316	.266	.607
Morality x parental sanctions x peer involvement	17.959	1	17.959	1.108	.295
Religiosity x peer sanctions x parental sanctions	25.286	1	25.286	1.560	.215
Religiosity x peer sanctions x peer involvement	4.743	1	4.743	.293	.590
Religiosity x parental sanctions x peer involvement	27.809	1	27.809	1.715	.194
Peer sanctions x parental sanctions x peer involvement	6.032	1	6.032	.372	.543
Explained	2055.706	27	76.137	4.696	
Residual	1524.125	94	16.214		
Total	3579.831	121	29.585		